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List of courses offered across all programs during last five year

Program Code	Program Name	Course Code	Course Name	Year Of Introduction
101	B.A 1st	1	FC Hindi Language	2015-16
		2	FC English Language	2015-16
		3	Hindi Littrature	2015-16
		4	English Littrature	2015-16
		11	Political Science	2015-16
		12	Social Science	2015-16
		13	Economics	2015-16
		99	Environmental Studies	2015-16
		102	B.A 2nd	1
2	FC English Language			2015-16
3	Hindi Littrature			2015-16
4	English Littrature			2015-16
11	Political Science			2015-16
12	Social Science			2015-16
13	Economics			2015-16
99	Environmental Studies			2015-16
103	B.A 3rd			1
		2	FC English Language	2015-16
		3	Hindi Littrature	2015-16
		4	English Littrature	2015-16
		11	Political Science	2015-16
		12	Social Science	2015-16
		13	Economics	2015-16
		99	Environmental Studies	2015-16
		121	B.COM 1st	1
2	FC English Language			2015-16
3	1.Financial Accounting 2.Business Communication			2015-16
4	1.Business Mathematics 2.Business Reg.Framework			2015-16
5	1.Business Environment 2.Business Economics			2015-16
122	B.COM 2nd	99	Enironmental Studies	2015-16
		1	FC Hindi Language	2015-16
		2	FC English Language	2015-16
		3	1.Corporate Accounting 2.Company Law	2015-16

		4	1. Cost Accounting 2. Principles Of Business Management	2015-16
		5	1. Business Statistics 2. Fundamentals Of Entrepreneurship	2015-16
123	B.COM 3rd	99	Environmental Studies	2015-16
		1	FC Hindi Language	2015-16
		2	FC English Language	2015-16
		3	Income Tax	2015-16
		4	Indirect Tax	2015-16
		5	Management Accounting	2015-16
		6	Auditing	2015-16
		8	1. Principles of Marketing 2. International Marketing	2015-16
		99	Environmental Studies	2015-16
150	B.SC 1st	1	FC Hindi Language	2015-16
		2	FC English Language	2015-16
		26	Botony	2015-16
		27	Zoology	2015-16
		33	Chemistry	2015-16
		99	Environmental Studies	2015-16
142	B.SC 2nd	1	FC Hindi Language	2015-16
		2	FC English Language	2015-16
		26	Botony	2015-16
		27	Zoology	2015-16
		33	Chemistry	2015-16
		99	Environmental Studies	2015-16
143	B.SC 3rd	1	FC Hindi Language	2015-16
		2	FC English Language	2015-16
		26	Botony	2015-16
		27	Zoology	2015-16
		33	Chemistry	2015-16
		99	Environmental Studies	2015-16

Principal  
Govt. Sant Rameshwar  
Gahira Guru ji College  
Ajitha, Dist.-Jashpur (C.G.)

List of courses offered across all programs during last five year

Program Code	Program Name	Course Code	Course Name	Year Of Introduction
101	B.A 1st	1	FC Hindi Language	2016-17
		2	FC English Language	2016-17
		3	Hindi Litratione	2016-17
		4	English Litratione	2016-17
		11	Political Science	2016-17
		12	Social Science	2016-17
		13	Economics	2016-17
		99	Environmental Studies	2016-17
102	B.A 2nd	1	FC Hindi Language	2016-17
		2	FC English Language	2016-17
		3	Hindi Litratione	2016-17
		4	English Litratione	2016-17
		11	Political Science	2016-17
		12	Social Science	2016-17
		13	Economics	2016-17
		99	Environmental Studies	2016-17
103	B.A 3rd	1	FC Hindi Language	2016-17
		2	FC English Language	2016-17
		3	Hindi Litratione	2016-17
		4	English Litratione	2016-17
		11	Political Science	2016-17
		12	Social Science	2016-17
		13	Economics	2016-17
		99	Environmental Studies	2016-17
121	B.COM 1st	1	FC Hindi Language	2016-17
		2	FC English Language	2016-17
		3	1. Financial Accounting 2. Business Communication	2016-17
		4	1. Business Mathematics 2. Business Reg. Framework	2016-17
		5	1. Business Environment 2. Business Economics	2016-17
		99	Enironmental Studies	2016-17
122	B.COM 2nd	1	FC Hindi Language	2016-17
		2	FC English Language	2016-17
		3	1. Corporate Accounting 2. Company Law	2016-17

		4	1. Cost Accounting 2. Principles Of Business Management	2016-17
		5	1. Business Statistics 2. Fundamentals Of Entrepreneurship	2016-17
123	B.COM 3rd	99	Environmental Studies	2016-17
		1	FC Hindi Language	2016-17
		2	FC English Language	2016-17
		3	Income Tax	2016-17
		4	Indirect Tax	2016-17
		5	Management Accounting	2016-17
		6	Auditing	2016-17
		8	1. Principles of Marketing 2. International Marketing	2016-17
150	B.SC 1st	99	Environmental Studies	2016-17
		1	FC Hindi Language	2016-17
		2	FC English Language	2016-17
		26	Botony	2016-17
		27	Zoology	2016-17
		33	Chemistry	2016-17
		99	Environmental Studies	2016-17
142	B.SC 2nd	1	FC Hindi Language	2016-17
		2	FC English Language	2016-17
		26	Botony	2016-17
		27	Zoology	2016-17
		33	Chemistry	2016-17
		99	Environmental Studies	2016-17
143	B.SC 3rd	1	FC Hindi Language	2016-17
		2	FC English Language	2016-17
		26	Botony	2016-17
		27	Zoology	2016-17
		33	Chemistry	2016-17
		99	Environmental Studies	2016-17

Principal  
Govt. Sant Rameshwar  
Gahira Guru Ji College  
Bagicha, Dist.-Jashpur (C.G.)

List of courses offered across all programs during last five year				
Program Code	Program Name	Course Code	Course Name	Year Of Introduction
101	B.A. 1st	1	FC Hindi Language	2017-18
		2	FC English Language	2017-18
		3	Hindi Literature	2017-18
		4	English Literature	2017-18
		11	Political Science	2017-18
		12	Social Science	2017-18
		13	Economics	2017-18
		99	Environmental Studies	2017-18
		1	FC Hindi Language	2017-18
		2	FC English Language	2017-18
		3	Hindi Literature	2017-18
		4	English Literature	2017-18
		11	Political Science	2017-18
12	Social Science	2017-18		
13	Economics	2017-18		
102	B.A. 2nd	99	Environmental Studies	2017-18
		1	FC Hindi Language	2017-18
		2	FC English Language	2017-18
		3	Hindi Literature	2017-18
		4	English Literature	2017-18
		11	Political Science	2017-18
		12	Social Science	2017-18
		13	Economics	2017-18
		99	Environmental Studies	2017-18
		1	FC Hindi Language	2017-18
		2	FC English Language	2017-18
		3	Hindi Literature	2017-18
		4	English Literature	2017-18
11	Political Science	2017-18		
12	Social Science	2017-18		
13	Economics	2017-18		
103	B.A. 3rd	99	Environmental Studies	2017-18
		1	FC Hindi Language	2017-18
		2	FC English Language	2017-18
		3	Hindi Literature	2017-18
		4	English Literature	2017-18
		11	Political Science	2017-18
		12	Social Science	2017-18
		13	Economics	2017-18
		99	Environmental Studies	2017-18
		1	FC Hindi Language	2017-18
		2	FC English Language	2017-18
		1	Financial Accounting	2017-18
		2	Business Communication	2017-18
3	Communication	2017-18		
121	B.COM 1st	1	Business Mathematics	2017-18
		2	Business Res. Framework	2017-18
		3	Business Environment	2017-18
		4	Business Economics	2017-18
		5	Environmental Studies	2017-18
		99	FC Hindi Language	2017-18
		1	FC English Language	2017-18
		2	FC English Language	2017-18
		3	Corporate Accounting	2017-18
		4	Company Law	2017-18
		5	Business Environment	2017-18
		99	Business Economics	2017-18
		1	Environmental Studies	2017-18
2	FC Hindi Language	2017-18		
3	FC English Language	2017-18		
122	B.COM 2nd	1	Corporate Accounting	2017-18
		2	Company Law	2017-18
		3	Business Environment	2017-18
		4	Business Economics	2017-18
		5	Environmental Studies	2017-18
		99	FC Hindi Language	2017-18
		1	FC English Language	2017-18
		2	FC English Language	2017-18
		3	Corporate Accounting	2017-18
		4	Company Law	2017-18
		5	Business Environment	2017-18
		99	Business Economics	2017-18
		1	Environmental Studies	2017-18
2	FC Hindi Language	2017-18		
3	FC English Language	2017-18		

		4	1. Cost Accounting 2. Principles Of Business Management	2017-18
		5	1. Business Statistics 2. Fundamentals Of Entrepreneurship	2017-18
		99	Environmental Studies	2017-18
123	B.COM 3rd	1	FC Hindi Language	2017-18
		2	FC English Language	2017-18
		3	Income Tax	2017-18
		4	Indirect Tax	2017-18
		5	Management Accounting	2017-18
		6	Auditing	2017-18
		8	1. Principles of Marketing 2. International Marketing	2017-18
		99	Environmental Studies	2017-18
150	B.SC 1st	1	FC Hindi Language	2017-18
		2	FC English Language	2017-18
		26	Botony	2017-18
		27	Zoology	2017-18
		33	Chemistry	2017-18
		99	Environmental Studies	2017-18
142	B.SC 2nd	1	FC Hindi Language	2017-18
		2	FC English Language	2017-18
		26	Botony	2017-18
		27	Zoology	2017-18
		33	Chemistry	2017-18
		99	Environmental Studies	2017-18
143	B.SC 3rd	1	FC Hindi Language	2017-18
		2	FC English Language	2017-18
		26	Botony	2017-18
		27	Zoology	2017-18
		33	Chemistry	2017-18
		99	Environmental Studies	2017-18

Principal  
Govt. Sant Rameshwar  
Gahira Guru ji College  
Bagicha, Dist.-Jashpur (C.G.)

List of courses offered across all programs during last five year

Program Code	Program Name	Course Code	Course Name	Year Of Introduction		
101	B.A 1st	1	FC Hindi Language	2018-19		
		2	FC English Language	2018-19		
		3	Hindi Littrature	2018-19		
		4	English Littrature	2018-19		
		11	Political Science	2018-19		
		12	Social Science	2018-19		
		13	Economics	2018-19		
		99	Environmental Studies	2018-19		
		102	B.A 2nd	1	FC Hindi Language	2018-19
				2	FC English Language	2018-19
3	Hindi Littrature			2018-19		
4	English Littrature			2018-19		
11	Political Science			2018-19		
12	Social Science			2018-19		
13	Economics			2018-19		
99	Environmental Studies			2018-19		
103	B.A 3rd			1	FC Hindi Language	2018-19
				2	FC English Language	2018-19
		3	Hindi Littrature	2018-19		
		4	English Littrature	2018-19		
		11	Political Science	2018-19		
		12	Social Science	2018-19		
		13	Economics	2018-19		
		99	Environmental Studies	2018-19		
		121	B.COM 1st	1	FC Hindi Language	2018-19
				2	FC English Language	2018-19
3	1. Financial Accounting 2. Business Communication			2018-19		
4	1. Business Mathematics 2. Business Reg. Framework			2018-19		
5	1. Business Environment 2. Business Economics			2018-19		
99	Enironmental Studies			2018-19		
122	B.COM 2nd	1	FC Hindi Language	2018-19		
		2	FC English Language	2018-19		
		3	1. Corporate Accounting 2. Company Law	2018-19		

		4	1. Cost Accounting 2. Principles Of Business Management	2018-19
		5	1. Business Statistics 2. Fundamentals Of Entrepreneurship	2018-19
123	B.COM 3rd	99	Environmental Studies	2018-19
		1	FC Hindi Language	2018-19
		2	FC English Language	2018-19
		3	Income Tax	2018-19
		4	Indirect Tax	2018-19
		5	Management Accounting	2018-19
		6	Auditing	2018-19
		8	1. Principles of Marketing 2. International Marketing	2018-19
150	B.SC 1st	99	Environmental Studies	2018-19
		1	FC Hindi Language	2018-19
		2	FC English Language	2018-19
		26	Botony	2018-19
		27	Zoology	2018-19
		33	Chemistry	2018-19
142	B.SC 2nd	99	Environmental Studies	2018-19
		1	FC Hindi Language	2018-19
		2	FC English Language	2018-19
		26	Botony	2018-19
		27	Zoology	2018-19
		33	Chemistry	2018-19
143	B.SC 3rd	99	Environmental Studies	2018-19
		1	FC Hindi Language	2018-19
		2	FC English Language	2018-19
		26	Botony	2018-19
		27	Zoology	2018-19
		33	Chemistry	2018-19
		99	Environmental Studies	2018-19

Principal  
Govt. Sans. Rameshwar  
Gahira Guru ji College  
Bagicha, Dist.-Jashpur (C.G.)



**List of courses offered across all programs during last five year**

Program Code	Program Name	Course Code	Course Name	Year Of Introduction
101	B.A 1st	1	FC Hindi Language	2019-20
		2	FC English Language	2019-20
		3	Hindi Litratue	2019-20
		4	English Litratue	2019-20
		11	Political Science	2019-20
		12	Social Science	2019-20
		13	Economics	2019-20
		99	Environmental Studies	2019-20
		102	B.A 2nd	1
2	FC English Language			2019-20
3	Hindi Litratue			2019-20
4	English Litratue			2019-20
11	Political Science			2019-20
12	Social Science			2019-20
13	Economics			2019-20
99	Environmental Studies			2019-20
103	B.A 3rd			1
		2	FC English Language	2019-20
		3	Hindi Litratue	2019-20
		4	English Litratue	2019-20
		11	Political Science	2019-20
		12	Social Science	2019-20
		13	Economics	2019-20
		99	Environmental Studies	2019-20
		121	B.COM 1st	1
2	FC English Language			2019-20
3	1. Financial Accounting 2. Business Communication			2019-20
4	1. Business Mathematics 2. Business Reg. Framework			2019-20
5	1. Business Environment 2. Business Economics			2019-20
99	Enironmental Studies			2019-20
122	B.COM 2nd			1
		2	FC English Language	2019-20
		3	1. Corporate Accounting 2. Company Law	2019-20

		4	1. Cost Accounting 2. Principles Of Business Management	2019-20
		5	1. Business Statistics 2. Fundamentals Of Entrepreneurship	2019-20
123	B.COM 3rd	99	Environmental Studies	2019-20
		1	FC Hindi Language	2019-20
		2	FC English Language	2019-20
		3	Income Tax	2019-20
		4	Indirect Tax	2019-20
		5	Management Accounting	2019-20
		6	Auditing	2019-20
		8	1. Principles of Marketing 2. International Marketing	2019-20
150	B.SC 1st	99	Environmental Studies	2019-20
		1	FC Hindi Language	2019-20
		2	FC English Language	2019-20
		26	Botony	2019-20
		27	Zoology	2019-20
		33	Chemistry	2019-20
142	B.SC 2nd	99	Environmental Studies	2019-20
		1	FC Hindi Language	2019-20
		2	FC English Language	2019-20
		26	Botony	2019-20
		27	Zoology	2019-20
		33	Chemistry	2019-20
143	B.SC 3rd	99	Environmental Studies	2019-20
		1	FC Hindi Language	2019-20
		2	FC English Language	2019-20
		26	Botony	2019-20
		27	Zoology	2019-20
		33	Chemistry	2019-20
		99	Environmental Studies	2019-20

  
**Principal**  
 C. Vt. Sant Rameshwar  
 Gadhira Guru ji College  
 Ichha, Dist. Jashpur (C.G.)

List of courses offered across all programs during last five year						
Program Code	Program Name	Course Code	Course Name	Year Of Introduction		
101	B.A 1st	1	FC Hindi Language	2020-21		
		2	FC English Language	2020-21		
		3	Hindi Litratione	2020-21		
		4	English Litratione	2020-21		
		11	Political Science	2020-21		
		12	Social Science	2020-21		
		13	Economics	2020-21		
		99	Environmental Studles	2020-21		
		102	B.A 2nd	1	FC Hindi Language	2020-21
				2	FC English Language	2020-21
				3	Hindi Litratione	2020-21
				4	English Litratione	2020-21
				11	Political Science	2020-21
12	Social Science			2020-21		
13	Economics			2020-21		
99	Environmental Studies			2020-21		
103	B.A 3rd			1	FC Hindi Language	2020-21
				2	FC English Language	2020-21
				3	Hindi Litratione	2020-21
				4	English Litratione	2020-21
				11	Political Science	2020-21
		12	Social Science	2020-21		
		13	Economics	2020-21		
		99	Environmental Studies	2020-21		
		121	B.COM 1st	1	FC Hindi Language	2020-21
				2	FC English Language	2020-21
				3	1.Financial Accounting 2.Business Communication	2020-21
				4	1.Business Mathematics 2.Business Reg.Framework	2020-21
				5	1.Business Environment 2.Business Economics	2020-21
99	Enironmental Studies			2020-21		
122	B.COM 2nd			1	FC Hindi Language	2020-21
				2	FC English Language	2020-21
				3	1.Corporate Accounting 2.Company Law	2020-21
				4	1.Cost Accounting 2.Principles Of Business Management	2020-21
				5	1.Business Statistics 2.Fundamentals Of Entrepreneurship	2020-21
				99	Environmental Studies	2020-21

123	B.COM 3rd	1	FC Hindi Language	2020-21
		2	FC English Language	2020-21
		3	Income Tax	2020-21
		4	Indirect Tax	2020-21
		5	Management Accounting	2020-21
		6	Auditing	2020-21
		8	1.Principles of Marketing 2.International Marketing	2020-21
		99	Environmental Studies	2020-21
150	B.SC 1st	1	FC Hindi Language	2020-21
		2	FC English Language	2020-21
		26	Botony	2020-21
		27	Zoology	2020-21
		33	Chemistry	2020-21
142	B.SC 2nd	99	Environmental Studies	2020-21
		1	FC Hindi Language	2020-21
		2	FC English Language	2020-21
		26	Botony	2020-21
		27	Zoology	2020-21
143	B.SC 3rd	33	Chemistry	2020-21
		99	Environmental Studies	2020-21
		1	FC Hindi Language	2020-21
		2	FC English Language	2020-21
		26	Botony	2020-21
		27	Zoology	2020-21
		33	Chemistry	2020-21
		99	Environmental Studies	2020-21

  
**Principal**  
 Govt.Sant Rameshwar  
 Gahira Guru ji College  
 Bagicha, Dist.-Jashpur (C.G.)

संशोधित पाठ्यक्रम  
बी.ए./बी.एस-सी./बी.कॉम./बी.एच.एस.-सी.  
भाग - एक (आधार पाठ्यक्रम)  
प्रश्न पत्र- प्रथम (हिन्दी भाषा)  
(पेपर कोड -0101)

पूर्णांक- 75

नोट :-

1. प्रश्न पत्र 75 अंक का होगा।
2. प्रश्न पत्र अनिवार्य होगा।
3. इसके अंक श्रेणी निर्धारण के लिए जोड़े जायेंगे।
4. प्रत्येक इकाई के अंक समान होंगे।

पाठ्य विषय :-

इकाई-1

- क. पल्लवन, पत्राचार, अनुवाद, पारिभाषिक शब्दावली एवं हिंदी में पदनाम
- ख. ईदगाह (कहानी) - मुंशी प्रेमचंद

इकाई-2

- क. शब्द शुद्धि, वाक्य शुद्धि, शब्द ज्ञान-पर्यायवाची शब्द, विलोम शब्द, अनेकार्थी शब्द, समश्रुत शब्द, अनेक शब्दों के लिए एक शब्द एवं मुहावरे-लोकोक्तियौं
- ख. भारत वंदना (कविता)- सूर्यकान्त त्रिपाठी निराला

इकाई-3

- क. देवनागरी लिपि - नामकरण, स्वरूप एवं देवनागरी लिपि की विशेषताएँ, हिंदी अपठित गद्यांश, संक्षेपण, हिंदी में संक्षिप्तीकरण
- ख. भोलाराम का जीव (व्यंग्य) - हरिशंकर परसाई

इकाई-4

- क. कम्प्यूटर का परिचय एवं कम्प्यूटर में हिंदी का अनुप्रयोग
- ख. शिकागो से स्वामी विवेकानंद का पत्र

इकाई-5

- क. मानक हिन्दी भाषा का अर्थ, स्वरूप, विशेषताएँ, मानक, उपमानक, अमानक भाषा
- ख. सामाजिक गतिशीलता - प्राचीन काल, मध्यकाल, आधुनिक काल

संशोधित पाठ्यक्रम  
बी.ए./बी.एस-सी./बी.कॉम./बी.एच.एस.-सी.  
भाग - दो, आधार पाठ्यक्रम  
प्रश्न पत्र - प्रथम (हिन्दी भाषा) (पैपर कोड - 0171)

पूर्णांक- 75

खण्ड - क निम्नलिखित 5 लेखकों के पाठ शामिल होंगे -

अंक-35

- |                        |   |                          |
|------------------------|---|--------------------------|
| 1. महात्मा गांधी       | - | चोरी और प्रायश्चित       |
| 2. आचार्य नरेंद्र देव  | - | युवकों का समाज में स्थान |
| 3. वासुदेव शरण अग्रवाल | - | मातृभूमि                 |
| 4. हरि ठाकुर           | - | डॉ. खूबचंद बघेल          |
| 5. पं. माधवराव सप्रे   | - | सम्भाषण-कुशलता           |

खण्ड-ख हिन्दी भाषा और उसके विविध रूप

अंक-16

1. कार्यालयीन भाषा
2. मीडिया की भाषा
3. वित्त एवं वाणिज्य की भाषा
4. मशीनी भाषा

खण्ड-ग हिन्दी की व्याकरणिक कोटियाँ  
संज्ञा, सर्वनाम, विशेषण, क्रिया विशेषण,  
समास, संधि एवं संक्षिप्तियाँ  
अनुवाद व्यवहार : अंग्रेजी से हिन्दी में अनुवाद

अंक-24

इकाई विभाजन-

- इकाई- 1 चोरी और प्रायश्चित : महात्मा गांधी / कार्यालयीन भाषा, मीडिया की भाषा  
इकाई- 2 युवकों का समाज में स्थान : आचार्य नरेंद्र देव / वित्त एवं वाणिज्य की भाषा, मशीनी भाषा  
इकाई- 3 मातृभूमि: वासुदेवशरण अग्रवाल / संज्ञा सर्वनाम, विशेषण, क्रिया विशेषण  
इकाई- 4 डॉ. खूबचंद बघेल : हरि ठाकुर/समास, संधि,  
इकाई- 5 सम्भाषण-कुशलता : पं. माधवराव सप्रे. / अनुवाद - अंग्रेजी से हिन्दी में अनुवाद, संक्षिप्तियाँ

मूल्यांकन योजना -

प्रत्येक इकाई से एक-एक प्रश्न पूछे जाएंगे। प्रत्येक प्रश्न में आंतरिक विकल्प होगा। प्रत्येक प्रश्न के 15 अंक होंगे। प्रत्येक इकाई को दो-दो खण्डों (कमश 'क' और 'ख' में) विभक्त करते हुए निर्धारित पाठ से 8 एवं शेष पाठ्य सामग्री से 7 अंक के प्रश्न होंगे। इस प्रकार पूरे प्रश्न-पत्र के पूर्णांक 75 होंगे।

(संशोधित पाठ्यक्रम)  
बी.ए./बी.एस-सी./बी.कॉम./बी.एच.एस.-सी.  
भाग - तीन, आधार पाठ्यक्रम  
प्रश्न पत्र - प्रथम (हिन्दी भाषा)  
(पेपर कोड - 0231)

पूर्णांक- 75

इकाई-एक (क) भारत माता : सुमित्रानंदन पंत

- (ख) कथन की शैलियाँ
1. विवरणात्मक शैली
  2. मूल्यांकन शैली
  3. व्याख्यात्मक शैली
  4. विचारात्मक शैली

इकाई-दो (क) सूखी डाली : उपेन्द्रनाथ अशक

- (ख) विभिन्न संरचनाएँ
1. विनम्रता सूचक संरचना
  2. विधि सूचक संरचना
  3. निषेध परक संरचना
  4. काल-बोधक संरचना
  5. स्थान-बोधक संरचना
  6. दिशा बोधक संरचना
  7. कार्य-कारण सम्बन्ध संरचना
  8. अनुक्रम संरचना

इकाई-तीन (क) वसीयत : मालती जोशी

- (ख) कार्यालयीन पत्र और आलेख
1. परिपत्र
  2. आदेश
  3. अधिसूचना
  4. ज्ञापन
  5. अनुरमारक
  6. पृष्ठांकन

इकाई-चार (क) योग की शक्ति : हरियंश राव बच्चन

- (ख) अनुवाद : स्वरूप एवं परिभाषा, उद्देश्य  
स्रोत भाषा और लक्ष्य भाषा,

अच्छे अनुवाद की विशेषताएँ.

अनुवाद प्रक्रिया, अनुवादक

इकाई-पाँच (क) संस्कृति और राष्ट्रीय एकीकरण : योगेश अटल

(ख) घटनाओं, समारोहों आदि का प्रतिवेदन, विभिन्न प्रकार के निमंत्रण पत्र  
मूल्यांकन योजना : प्रत्येक इकाई से एक-एक प्रश्न पूछा जाएगा। प्रत्येक प्रश्न में आंतरित विकल्प होगा।  
प्रत्येक प्रश्न के 15 अंक होंगे। इसलिए प्रत्येक प्रश्न के दो भाग 'क' और 'ख' होंगे एवं अंक क्रमशः 8 एवं 7  
अंक होंगे। प्रश्नपत्र का पूर्णांक 75 निर्धारित है।

पाठ्यक्रम संशोधन का औचित्य -

निर्धारित पाठ का अध्ययन एवं हिन्दी भाषा प्रयोग की व्यवहारिक प्रणालियों से विद्यार्थियों को परिचित कराना  
तथा भाषा प्रयोग की सामान्य अशुद्धियों को दूर करने की दृष्टि से पाठ्यक्रम तैयार किया गया है। विद्यार्थियों के लिए  
पाठ्यक्रम का विस्तार बहुत ज्यादा न हो इसका ध्यान रखा गया है।

अध्यक्ष- हिन्दी अध्ययन मंडल

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के



बी. ए. भाग एक B.A. Part I

राजनीति विज्ञान Political Science

प्रथम प्रश्न पत्र : राजनीतिक सिद्धान्त Paper I : Political Theory

- इकाई 1 : राजनीति विज्ञान का अर्थ, परिभाषा ( आधुनिक अवधारणा सहित ) । राजनीति एक विशिष्ट मानवीय व्यवहार के रूप में । शक्ति, सत्ता, प्रभाव : अर्थ, विशेषताएं, प्रकार । राजनीति विज्ञान की अध्ययन पद्धतियां : परम्परागत एवं व्यवहारवाद एवं उत्तर व्यवहारवाद ।
- Unit 1 : Meaning and Definition of Political Science ( with modern concept ). Politics as a specific human behaviour. Power, Authority and Influence : meaning, features and kinds. Method of Study to Political Science : Traditional , Behaviouralism and Post Behaviouralism.
- इकाई 2 : राज्य एवं उसके आवश्यक तत्व । राज्यात्मकता के विभिन्न सिद्धान्त, मार्क्सवादी सिद्धान्त । साव्यधिक सिद्धान्त ।
- Unit 2 : State and its essential elements. Various theories of the origin of the State, Marxist theory . Organismic Theory.
- इकाई 3 : सम्प्रभुता एवं उसकी बहुलवादी आलोचना । अधिकार: अर्थ, प्रकार, सिद्धान्त । कर्तव्य । स्वतन्त्रता : अर्थ, प्रकार, संरक्षण । समानता : अर्थ, प्रकार एवं स्वतन्त्रता से सम्बंध । प्रजातन्त्र : परिभाषा, व्यापक अर्थ, धुनीतियां, सफलता के लिए आवश्यक शर्तें, गुण-दोष । प्रत्यक्ष प्रजातन्त्र ।
- Unit 3 : Sovereignty and its pluralistic criticism. Rights : meaning, kinds and theories. Duties. Liberty : meaning, kinds , safeguards. Equality : meaning, kinds and relations with Liberty. Democracy : meaning, comprehensive meaning, challenges, conditions for its success, merits and demerits. Direct Democracy.
- इकाई 4 : शासन के प्रकार : एकात्मक व संघात्मक, संसदीय व अल्पशासनिक, निरंकुशतन्त्र । शासन के अंग : कार्यपालिका, व्यवस्थापिका, न्यायपालिका । शक्ति पृथक्करण का सिद्धान्त व नियंत्रण -संतुलन का सिद्धान्त । सविधान : अर्थ, प्रकार । प्रतिनिधित्व के सिद्धान्त एवं निर्वाचन प्रणालियां ।
- Unit 4 : Kinds of Government : Unitary and Federal, Parliamentary and Presidential. Dictatorship. Organs of Government : Executive, Legislature and Judiciary. Theory of Separation of Powers and Checks and Balances. Constitution : meaning and kinds. Theories of representation and Electoral Process.
- इकाई 5 : लोककल्याणकारी राज्य । दल पद्धति : अर्थ, प्रकार, पद्धति । दबाव समूह : अर्थ, प्रकार, तकनीक । सामाजिक परिवर्तन : अर्थ, विशेषताएं, सिद्धान्त । नारीवाद, राष्ट्रवाद ।
- Unit 5 : Public Welfare State. Party System : meaning , kinds , process. Pressure Groups : meaning, kinds and technique. Social Change : meaning, characteristics, theories. Feminis. Nationalism.

राजनीतिक सिद्धांत

बी.ए. प्रथम  
प्रथम प्रश्न पत्र

1. ओ.पी. गाबा, समकालीन राजनीतिक सिद्धांत, मयूर पेपर बैक्स नोएडा।
2. ओ.पी. गाबा, राजनीति सिद्धांत की रूपरेखा, मयूर पेपर बैक्स नोएडा।
3. जे.सी. जौहरी व सीमा जौहरी, आधुनिक राजनीति विज्ञान के सिद्धांत, स्टर्लिंग पब्लिकेशन।
4. पंत गुप्ता जैन, राजनीति शास्त्र के आधार, सेंट्रल पब्लिकेशिंग हाऊस इलाहाबाद।
5. प्रो. आनंद प्रकाश अवस्थी, भारतीय शासन एवं राजनीति, लक्ष्मीनारायण अग्रवाल, आगरा।
6. Andrew Haywood Political Theory, An Introduction.
- 7- O.P. Gaba An Introduction to Political Theory, Macmillan India Ltd.

द्वितीय प्रश्न पत्र : भारतीय शासन एवं राजनीति Paper II : Indian Government and Politics

- इकाई 1 : भारतीय राष्ट्रीय आन्दोलन : 1858 का प्रथम स्वतन्त्रता संग्राम, असहयोग आन्दोलन, सविनय अवज्ञा आन्दोलन, भारत छोड़ो आन्दोलन । भारत का संविधानिक विकास : 1858, 1909, 1919 और 1935 का भारत शासन अधिनियम ।
- Unit 1 : Indian National Movement : First Independence Movement 1858, Non cooperation Movement, Civil Disobedience Movement and Quit India Movement. Constitutional Development of India : Govt. of India Act of 1858, 1909, 1919 and 1935.
- इकाई 2 : भारतीय संविधान : विशेषताएं, प्रस्तावना, स्रोत, संघीय व्यवस्था, मौलिक अधिकार, मूल कर्तव्य, नीति निर्देशक तत्व । संविधान संशोधन प्रक्रिया ।
- Unit 2 : Constitution of India : Characteristics, Preamble, Sources. Federal System. Fundamental Rights and Duties, Directive Principles of State Policy. Constitution Amendment Process.
- इकाई 3 : संघीय कार्यपालिका : राष्ट्रपति, उपराष्ट्रपति, मन्त्रिपरिषद् और प्रधानमंत्री । संघीय व्यवस्थापिका : संसद : लोकसभा और राज्यसभा । संसदीय प्रक्रिया ।
- Unit 3 : Union Executive : President, Vice President, Council of Ministers and Prime Minister. Union Legislature : Parliament: Lok Sabha and Rajya Sabha. Parliamentary Procedure.
- इकाई 4 : संघीय न्यायपालिका : सर्वोच्च न्यायालय : गठन, क्षेत्राधिकार, न्यायिक पुनरावलोकन, न्यायिक सक्रियतावाद । राज्य कार्यपालिका : राज्यपाल, मन्त्रिपरिषद् और मुख्यमंत्री ।
- Unit 4 : Union Judiciary : Supreme Court : Organisation, Jurisdiction, Judicial Review, Judicial Activism. State Executive : Governor, Council of Ministers and Chief Minister.
- इकाई 5 : राज्य व्यवस्थापिका : विधानसभा एवं विधानपरिषद् । निर्वाचन आयोग व चुनाव सुधार । राष्ट्रीय व क्षेत्रीय दल । भारतीय राजनीति के प्रमुख मुद्दे : जाति, धर्म, भाषा और क्षेत्र । पंचायती राज व्यवस्था ।
- Unit 5 : State Legislature : Legislative Assembly and Legislative Council. Election Commission and Election Reforms. National and Regional Parties. Major issues of Indian Politics : Caste, Religion, Language and Region. Panchayati Raj System.

संदर्भ पुस्तकें (Reference Books)

8. डॉ. सुभाष कश्यप, भारत का संविधानिक विकास और संविधान, हिन्दी माध्यम कार्यान्वयन निदेशालय दिल्ली विश्वविद्यालय ।
- डॉ. सुभाष कश्यप, हमारी संसद, भारत की संसद एक परिचय, राष्ट्रीय पुस्तक न्यास ।
10. डॉ. रूपा मंगलानी, भारतीय शासन एवं राजनीति, राजस्थान हिन्दी ग्रंथ अकादमी जयपुर ।
- 11- M.V. Pylee, Constitutional History of India, S.Chand.
- 12- D.D. Basu Indian Constitution

बी. ए. भाग एक B. A. Part I

राजनीति विज्ञान Political Science

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8. डॉ. सुभाष कश्यप, भारत का संवैधानिक विकास और संविधान, हिन्दी माध्यम कार्यान्वयन निदेशालय दिल्ली विश्वविद्यालय ।
9. डॉ. सुभाष कश्यप, हमारी संसद, भारत की संसद एक परिचय, राष्ट्रीय पुस्तक न्यास ।
10. डॉ. रूपा मंगलानी, भारतीय शासन एवं राजनीति, राजस्थान हिन्दी ग्रंथ अकादमी जयपुर ।
- 11- M.V. Pylee, Constitutional History of India, S.Chand.
- 12- D.D. Basu Indian Constitution

**Revised syllabus**  
**SOCIOLOGY 2018-2019**

**B.A. PART-I**

**Paper -II**

**CONTEMPORARY INDIAN SOCIETY (Paper Code-0116)**

- UNIT-I** **Classical View about Indian Society:** Varna, Asharam, Karma, Dharma and Purusharth.
- UNIT-II** **The Structure and composition of Indian society.**  
**Structure ;** Village ,Towns, Cities and Rural – Urban Linkage,  
**Compositions:** Tribes, Dalits, Women and Minorities.
- UNIT-III** **Basic Institutions of Indian Society:**  
Caste system, Joint Family, Marriage and Changing dimensions.
- UNIT-IV** **Familial Problems:**  
Dowry, Domestic violence, Divorce, Intra-intergenerational conflict, problem of elderly.
- UNIT-V** **Social Problems:**  
Surrogate Motherhood, Live in Relationship, Regionalism, Communalism, Corruption, Youth unrest.

**ESSENTIAL READINGS :-**

- 1 Dube, S. C. 1995. Society in India, New Delhi: National Book Trust.
- 2 Mandelbaum, D.G. 1970. Society in India, Bombay: Poular Prakashan.
- 3 Shrinivas, M.N. 1973. Social Change in Modern India, California: University of California Press.
- 4 Shrinivas, M.N. 1990. Social Change Structure, New Delhi: Hindustan Publishing Corporation.
- 5 Uberoi Patricia, 1993. Family and Marriage In India, New Delhi: Oxford University Press.

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Raipur. (C.G.)

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**Revised syllabus**  
**SOCIOLOGY 2018-2019**

**B.A. PART-I**

**Paper – I**

**INTRODUCTION TO SOCIOLOGY (Paper Code - 0115)**

- UNIT-I** **Sociology** : Meaning, Nature, scope, Subject matter and significance.  
**Basic concepts** : Society, Community, institution, Association, group, Status and role.
- UNIT-II** **Social Institutions**: Marriage, Family and kinship.  
**Culture and society**: Culture, socialization, The individual and society, social control, norms and values.
- UNIT-III** **Social Stratification**: Meaning, forms and theories.  
**Social Mobility**: Meaning, forms and theories.
- UNIT-IV** **Social change**: Meaning and patterns, types, factors, evolution and progress.
- UNIT-V** **Social System and process**: Social System- meaning, characteristics and elements.  
Social process- Meaning, elements, characteristics and types.

**ESSENTIAL READINGS :-**

- 1 Bottomore T.B., Sociology- A guide to Problems and Literature, Bombay. George Allen and unwin(India) 1972.
- 2 Inkeles, Alex, What is Sociology ? New Delhi, Prentice Hall of India 1987.
- 3 Jayram, N., Introductory Sociology, Madras Maomillan India 1988.
- 4 Johnson Harry, M., Sociology of systematic Introduction New Delhi Allied Publishers 1995.

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संशोधित पाठ्यक्रम

बी. ए. भाग-1

हिन्दी साहित्य

प्रथम- प्रश्न पत्र

(प्राचीन हिन्दी काव्य)

(पेपर कोड- 0103)

पूर्णांक 75

उद्देश्य एवं प्रस्तावना-

प्राचीन से तात्पर्य है- आधुनिक काल से पूर्व का काल। सही अर्थ में हिन्दी भाषा और साहित्य का विकास आदिकाल से शुरू होता है। इसमें धार्मिक तथा ऐतिहासिक दो प्रकार का साहित्य मिलता है, जो प्रबंध, मुक्तक, रासो, फागु, चरित, सुभाषित आदि विविध काव्यरूपों में अभिव्यंजित है। मध्यकालीन साहित्य की पृष्ठभूमि के रूप में इसे प्रतिष्ठापित किया जाता है।

मध्यकालीन काव्य में भक्तिकाव्य, जहाँ लोक जागरण को स्वर देने वाला है, वहीं शैतिकाल अपने लौकिक- श्रृंगारिक, परिदृश्य में तत्कालीन सामाजिक, सांस्कृतिक, राजनीतिक स्थितियों को बेहोस अभिव्यंजित करता है। अतः भाषा, संस्कृति, विचार, मानवता, काव्यरूपता, लौकिकता- पारलौकिकता, आदि दृष्टियों से इसका अध्ययन अत्यावश्यक है।

पाठ्य विषय-

1. कबीर (कबीर- कांतिकुमार जैन, प्रारंभिक 50 साखियाँ)
2. जायसी- (संक्षिप्त पद्यावत- श्यामसुंदर दास, नागमती वियोग वर्णन)
3. सूर (भ्रमर गीत सार- सं. आचार्य रामचन्द्र शुक्ल, प्रारंभिक 25 पद)
4. तुलसी - "रामचरित मानस" के सुंदरकाण्ड से प्रारंभिक 30 दोहे चौपाई छंद साहित्य
5. घनानन्द (घनानन्द- सं. विश्वनाथ प्रसाद मिश्र, प्रारंभिक 25 छंद)

द्रुत पाठ हेतु निम्नांकित तीन कवियों का अध्ययन किया जावेगा- जिसमें से किन्हीं दो पर लघुउत्तरीय प्रश्न पूछे जायेंगे-

1. विद्यापति
2. रहीम
3. रसखान

अंक विभाजन-

1. व्याख्याएँ (3) - 21 अंक
2. आलोचनात्मक प्रश्न (2) - 24 अंक
3. लघुउत्तरीय प्रश्न (5) - 15 अंक
4. वस्तुनिष्ठ प्रश्न (15) - 15 अंक

संशोधित  
बी. ए. भाग-1  
हिन्दी साहित्य  
द्वितीय- प्रश्न पत्र  
हिन्दी कथा साहित्य  
(पेपर कोड- 0104)

पूर्णांक 75

उद्देश्य एवं प्रस्तावना-

गद्य की प्रमुख विधाओं का इतना द्रुत विकास इनकी लोकप्रियता का प्रमाण प्रस्तुत करता है। इसमें आधुनिक जीवन, अपनी विविध कमियों के साथ यथार्थ रूप में अभिव्यजित हुआ है। जीवन की अनुभूतियाँ, संवेदनाओं तथा विविध परिस्थितियों के साक्षात्कार के लिए इनका अध्ययन सर्वथा अपेक्षित है।

पाठ्य विषय-

व्याख्या एवं आलोचनात्मक प्रश्नों के लिए एक उपन्यास एवं आठ कहानीकारों की एक- एक प्रतिनिधि कहानी का अध्ययन आवश्यक है।

उपन्यास	1. प्रेमचंद	- गबन
कहानी	1. प्रेमचंद	- कफन
	2. जयशंकर प्रसाद	- आकाश दीप
	3. यशपाल	- परदा
	4. फणीश्वनाथ रेणु	- ठेस
	5. मोहन राकेश	- मलबे का मालिक
	6. भीष्म साहनी	- चीफ की दावत
	7. गुलशेर खॉं शानी	- जली हुई रस्ती
	8. रामेय राघव	- गदल

द्रुत पाठ के लिए निम्नांकित तीन कथाकारों का अध्ययन अपेक्षित है, जिनमें से किन्हीं दो पर लघुउत्तरीय प्रश्न पूछे जावेंगे-

1. उपेन्द्रनाथ अशक,
2. बाल शीरि रेड्डी
3. शिवानी

अंक विभाजन-	व्याख्या (3)	21 अंक
	आलोचनात्मक प्रश्न (2)	24 अंक
	लघुउत्तरीय प्रश्न (5)	15 अंक
	वस्तुनिष्ठ प्रश्न (15)	15 अंक



## REVISED SYLLBUS

### B. A. Part- I (Economics)

#### Subject : Micro Economics, Paper-I (Code: 0111)

##### UNIT 1

Introduction - Definitions Nature and scope of Economics, Methodology in Economics, Utility - Cardinal and Ordinal approaches, Indifference curve, Consumer's equilibrium, Giffin goods, Demand - Law of Demand, Elasticity of demand Consumer's surplus

##### UNIT 2

Theory of production and cost, Production decision, Production function, Iso-quant, Factor substitution, Law of variable proportions, Returns to scale, Economies of scale, Different concepts of cost and their interrelation, Equilibrium of the firm.

##### UNIT 3

Market structure-perfect and imperfect markets, Equilibrium of a firm-Perfect competition, Monopoly and price discrimination, Monopolistic competition, Duopoly, Oligopoly, controlled and administered prices

##### UNIT 4

Factor pricing-Marginal productivity theory of distribution, Euler's theorem, Theories of wage determination, wages and collective bargaining, wage differentials, Rent - Scarcity Rent, differential rent, Quasi rent, Modern Rent Theory, Interest Classical and Keynesian Theories, Modern Theory, Profits - Innovation, Risk bearing and uncertainty theories

##### UNIT 5

Welfare economics: , What welfare economics is about ?, Role of value judgments in welfare economics, Pigou's contribution in the field of welfare economics, Concept and condition of Pareto optimality, New welfare economics: Kaldor-Hicks welfare criterion, Scitovsky paradox, Social welfare function and social choice: Bergson-Samuelson social welfare function, Prof. Amartya Sen's critique, Arrow impossibility theorem

##### References:

1. Bach, G. L. (1977) "Economics," Prentice Hall of India, New Delhi.
2. Gauld, J.P. and Edward P. L. (1996), "Microeconomic Theory," Richard Irwin, Homewood

## REVISED SYLLBUS

### B. A. Part- I (Economics)

#### Subject : Indian Economy , Paper-II (Code: 0112)

##### UNIT 1

Pre and post independent Indian economy: A short introduction of economic policies of British India, State of economy at the time of independence, Planning exercise in India-Planning in India through different five Year Plans, The planning commission and NITI Aayog, Growth and development in pre-reform period, New Economic Reforms: Liberalization, Privatization and Globalization, Growth, development and structural change in post-reform period.

##### UNIT 2

Population and human development: Demographic trends and issues of education, health, malnutrition and migration. Growth and distribution: Trends and policies in poverty, inequality, unemployment and occupational distribution, International comparison in human development and poverty reduction

##### UNIT 3

Agriculture: Nature and importance, Trends in agriculture production and productivity, factors determining productivity, Land reforms, new agriculture strategies and green revolution, rural credit, Agricultural marketing, natural resources and infra-structure development: Performance, problems and policies, MUDRA yojana.

##### UNIT 4

Industry: Growth and productivity, Industrial policy and reforms, Growth and problems of small and cottage scale industries, Role of public sector enterprises in India's industrialization. Trends and performance in services.

##### UNIT 5

External Sector - Role of foreign trade, Trends in exports and imports, Composition and direction of India's foreign trade, Export promotion measures and the new trade policies, Recent macroeconomic scenario: National Income, investment, saving and inflation, Current macroeconomic policies and their impact, fiscal policies and monetary policy.

##### References

1. Uma Kapila, "Indian Economy : Performance and Policies," published by Academic Foundation.
2. Dutta and Sundram, "Indian Economy", S. Chand Publications.

इकाई 1 : प्लेटो : आदर्श राज्य - न्याय, शिक्षा, साम्यवाद, दार्शनिक शासक ।

अरस्तू : राज्य, दासप्रथा, नागरिकता, कानि ।

Unit 1 : Plato : Ideal State : Justice, Education, Communism, Philosopher King.

Aristotle : State, Slavery, Citizenship, Revolution.

इकाई 2 : मैकियावेली : युग का शिशु, धर्म व नैतिकता, राजा के कर्तव्य और आचरण ।

हॉब्स : सामाजिक समझौता सिद्धान्त - लेवियाथन । लॉक : सामाजिक समझौता सिद्धान्त ।

रुसो : सामाजिक समझौता सिद्धान्त, सामान्य इच्छा ।

Unit 2 : Machiavelli : Child of his times, Religion and Morality, Duties and Conduct of King. Hobbes : Social Contract Theory: Leviathan. Locke : Social Contract Theory. Rousseau : Social Contract Theory and General Will.

इकाई 3 : बेथम : उपयोगितावाद । मिल : उपयोगितावाद में संशोधन, स्वतंत्रता और प्रतिनिधि शासन ।

ग्रीन : राजनीतिक विचार । मार्क्स : राजनीतिक विचार ।

Unit 4 : Bentham : Utilitarianism. Mill : Amendment in Utilitarianism. Liberty and Representative Government. Green : Political Thoughts. Marx : Political Thoughts.

इकाई 4 : आदर्शवाद, व्यक्तिवाद, उदारवाद, समाजवाद, फासीवाद : विशेषताएं और आलोचना ।

Unit 4 : Idealism, Individualism, Liberalism, Socialism, Fascism : Features and Criticism.

इकाई 5 : मनु और कौटिल्य : सप्तांग सिद्धान्त, राजा और राजपद, प्रशासकीय व्यवस्था, राज्यमण्डल ।

गांधी : सत्य, अहिंसा, सत्याग्रह एवं राजनीतिक विचार । अम्बेडकर : राजनीतिक एवं सामाजिक विचार

दीनदयाल उपाध्याय : एकात्ममानववाद ।

Unit 5 : Manu and Kautilya : Saptang Theory, King and Kingship, Administrative System, Rajyamandal.

Gandhi : Truth, Non violence, Satyagrah and Political thoughts.

Ambedkar : Political and Social thoughts.

Deen Dayal Upadhyay : Akatmamanavvad.

बी. ए. भाग 2 B. A. Part II

राजनीति विज्ञान Political Science

द्वितीय प्रश्नपत्र : तुलनात्मक शासन एवं राजनीति Paper II : Comparative Government and Politics

इकाई 1 :

ब्रिटिश संविधान : विकास, विशेषताएं, कार्यपालिका, व्यवस्थापिका, न्यायपालिका ।

Unit 1 :

British Constitution : Evolution , Salient Features, Executive, Legislature and Judiciary.

इकाई 2 :

संयुक्त राज्य अमेरिका का संविधान : विशेषताएं, कार्यपालिका, व्यवस्थापिका, न्यायपालिका, शक्ति पृथक्करण व नियंत्रण संतुलन का सिद्धान्त ।

Unit 2 :

Constitution of United States of America : Salient Features, Executive, Legislature and Judiciary. Theory of Separation of Powers and checks and balances.

इकाई 3 :

स्विटजरलैण्ड का संविधान : विशेषताएं, कार्यपालिका, व्यवस्थापिका, न्यायपालिका, प्रत्यक्ष प्रजातन्त्र । Unit 3 : Constitution of Switzerland : Salient Features, Executive, Legislature and Judiciary. Direct Democracy.

इकाई 4 :

चीन का संविधान : विशेषताएं, कार्यपालिका, व्यवस्थापिका, न्यायपालिका, साम्यवादी दल ।

Unit 4 :

Constitution of China : Salient Features, Executive, Legislature and Judiciary. Communist Party.

इकाई 5 :

तुलनात्मक राजनीति : अर्थ, परिभाषा, । ईस्टन का व्यवस्था सिद्धान्त, आमण्ड का संरचनात्मक-प्रकार्यात्मक उपागम । राजनीतिक विकास, राजनीतिक समाजीकरण, राजनीतिक संस्कृति की अवधारणा ।

Unit 5 :

Comparative Politics : meaning , Definition. System Theory of David Easton, Structural -functional Approach of Almond. Concept of Political Development, Political Socialisation, Political Culture

**Revised syllabus**  
**SOCIOLOGY 2018-2019**

B.A. PART-II  
PAPER - I  
SOCIOLOGY OF TRIBAL SOCIETY  
(Paper Code-0185)

- UNIT-I **Tribes:** Concepts, Characteristics, Tribes and Schedule Tribes, Distinction between Tribe and Caste.
- UNIT-II **Classification of Tribal people:** Food gatherers and hunters, Shifting cultivates, Nomads, Peasant settled Agriculturists and Artisans.
- UNIT-III **Socio-cultural Profile:** Kinship, Marriage, Family, Religion and belief cultural traditions.
- UNIT-IV **Tribal sensitization:** Tribal Mobility, Schemes of Tribal Development, Various Tribal Movements.
- UNIT-V **Problems of Tribal People:** Poverty, Illiteracy, Indebtedness, Agrarian issues, Exploitation study of tribal communities in Chhattisgarh with special reform to Particularly Venerable Tribal Groups (PVTG).

**ESSENTIAL READINGS :-**

- 1 Vidyarthi, L.P. 1965. Cultural Counters of Tribal Bihar, Punthi Pustak, Calcutta.
- 2 Bose, N.K. 1971. Tribal Life in India, National Book Trust, New Delhi.
- 3 Das, R.K. 1988. The Tribal Social Structure, Inter India Publications, New Delhi.
- 4 Dubey, S.C.. 1977. Tribal Heritage of India, Ethnicity, Identity and Interaction, Vol.1, Vikash Publishing House, Delhi.
- 5 Elwin, Varrier. 1989. The Tribal World of Verrier Elwin: An Autobiography, Oxford, New Delhi.
- 6 Russell, R.V. and Hira Lal. 1916. The Tribes and Castes of Central Province of India, 4 Vols. Cosmo Publications, New Delhi.

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**Revised syllabus**  
**SOCIOLOGY 2018-2019**

B.A. PART-II.

PAPER-II

**CRIME AND SOCIETY**

(Paper Code-0186)

- UNIT-I** **Concept of Crime:** Meaning, Characteristics and Types.  
**School of Crime:** Classical, Sociological and Psychological.
- UNIT-II** **Structure of Crime:** Anomie, Criminality and Suicide, Organized Crime,  
White Collar Crime and Cyber Crime
- UNIT-III** **Social Evils and Crime:** Alcoholism, Drug Addiction, Dowry and Beggary.
- UNIT-IV** **Punishment:** Meaning, Characteristics, Objectives and Types,  
Major Theories of Punishment.
- UNIT-V** **Correctional Process:** Role of Police and Judiciary in India, Development of Jail  
reforms in India and Modern correctional concepts- Probation, Parole and after  
care Programme.

**ESSENTIAL READINGS :-**

1. Mike, & Maguire. (2007). *The Oxford Hand Book of Criminology*. London: Oxford University Press.
2. Haster, S., & Eglin, P. (1992). *A Sociology of Crime*. London: Routledge Publishers.
3. Mead, G. H. (1934). *Mind Self and Society*. Chicago: Chicago University Press
4. Gottfredson, Michael, R., Hirschi, & Travis. (1990). *A General Theory of Crime*. London: Stanford University Press.
5. Sutherland, & Edwin, H. (1924). *Principles of Criminology*. Chicago: Chicago University Press.
6. Sutherland, Edward, H., & White, C. (1949). *Crime*. New York, Holt, Rinehart: Winston Press, New York.

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संशोधित  
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हिन्दी साहित्य  
प्रथम प्रश्न पत्र

अर्वाचीन हिन्दी काव्य (पेपर कोड- 0173)

पूर्णांक- 75

प्रस्तावना- आधुनिक काव्य आधुनिकता की समस्त विशेषताओं को समेटे हुए है। स्वतंत्रता प्राप्ति के पूर्व की भाव- भाषा, शिल्प, अन्तर्वस्तु सम्बन्धी समस्त विकास धारा यहां सजीव रूप में देखी जा सकती है। इसे अनदेखा करना मनुष्य की विकास यात्रा को नजर अंदाज करना है। इस यात्रा के साक्षात्कार के लिए आधुनिक काव्य का अध्ययन अपेक्षित ही नहीं अपितु अनिवार्य है।

पाठ्य विषय-

1. मैथिलीशरण गुप्त - भारत- भारती की कविताएँ
2. सूर्यकान्त त्रिपाठी निराला - (1) सखि बसन्त आया।  
(2) वर दे, वीणा वादिनी वर दे।  
(3) हिन्दी के सुमनों के प्रति पत्र।  
(4) तोड़ती- पत्थर।  
(5) राजे ने अपनी रखवाली की।
3. सुमित्रानंदन पंत - (1) बादल।  
(2) परिवर्तन 2 पद (1. खोलता इधर जन्मलोचन  
2. आज का दुख कल का आल्हाद)  
(3) ताज।  
(4) झंझा में नीम।  
(5) भारत माता।
4. माखन लाल चतुर्वेदी - (1) बलि पंथी से।  
(2) साँझ और ढोलक की धारें।  
(3) मैं बेच रही हूँ, दही।  
(4) उलाहना।  
(5) निः शस्त्र सेनानी।
5. स. ही. वात्स्यायन अज्ञेय - (1) सबेरे उठा तो धूप खिली थी।  
(2) साम्राज्ञी का नैवेद्य दान।  
(3) घर।  
(4) चांदनी जी लो।  
(5) दूर्वाचल।

दुतपाठ हेतु निम्न कवियों का अध्ययन किया जाएगा, जिन पर लघुउत्तरीय प्रश्न पूछे जायेंगे-

संशोधित  
बी. ए. भाग-2  
हिन्दी साहित्य  
द्वितीय प्रश्न पत्र

हिन्दी निबंध तथा अन्य गद्य विद्यार्थी(पेपर कोड- 0174)

पूर्णांक- 75

पाठ्य विषय-

व्याख्या एवं आलोचनात्मक प्रश्नों के लिए एक नाटक, पांच प्रतिनिधि निबंध और पाँच एकांकी का निर्धारण किया गया है।

नाटक- अंधेरी नगरी- भारतेन्दु हरिश्चन्द्र

निबंध-	1. कोध	- आचार्य रामचन्द्र शुक्ल।
	2. वसन्त	- डॉ. हजारी प्रसाद द्विवेदी।
	3. उस अमराई ने राम- राम कही हैं	- डॉ. विद्यानिवास मिश्र।
	4. काव्येषु नाट्यम रम्यम्	- बाबू गुलाब राय।
	5. बेईमानी की परत	- हरिश्चंकर परसाई
एकांकी-	1. औरंगजेब की आखिरी रात	- डॉ. रामकुमार वर्मा
	2. स्ट्राईक	- मुनेश्वर
	3. एक दिन	- लक्ष्मीनारायण मिश्र
	4. दस हजार	- उदयशंकर भट्ट
	5. मम्मी ठकुराईन	- डॉ. लक्ष्मीनारायण लाल

दुत पाठ के लिए तीन गद्यकारों का अध्ययन किया जायेगा, जिन पर लघुउत्तरीय प्रश्न पूछे जायेंगे।

1. राहुल सांकृत्यायन
2. महादेवी वर्मा
3. हबीब तनवीर

अंक विभाजन- व्याख्याएं (3)	- 21 अंक
आलोचनात्मक प्रश्न (2)	- 24 अंक
लघुउत्तरीय प्रश्न (5)	- 15 अंक
वस्तुनिष्ठ (15)	- 15 अंक
कुल अंक	75 अंक

इकाई विभाजन-

इकाई- 1 व्याख्या

इकाई- 2 अंधेरी नगरी एवं कोध, वसन्त, उस अमराई ने राम- राम कही हैं।

इकाई- 3 औरंगजेब की आखिरी रात, स्ट्राईक, एक दिन, दस हजार, मम्मी ठकुराईन

इकाई- 4 दुतपाठ के गद्यकार- राहुल सांकृत्यायन, महादेवी वर्मा, हबीब तनवीर।

इकाई- 5 वस्तुनिष्ठ (समग्र पाठ्य विषय से )



## REVISED SYLLBUS

### B.A. Part- II (Economics)

#### Subject : Macro Economics, Paper-I (Code: 0181)

##### UNIT 1

National Income: Concept and measurement of national income, Economic welfare and national income, Social accounting. Circular flow of income, National income accounting, Green accounting Classical theory of employment, Say's law of market Keynesian theory of employment.

##### UNIT 2

Consumption Function - Average and marginal propensity to consume, Keynes's psychological law of consumption. Determinants of the consumption function. The saving function. The investments multiplier and its effectiveness, The investment Function - marginal efficiency of capital, Autonomous and induced investment. Saving and investment equality.

##### UNIT 3

Nature and Characteristics of trade cycle, Theories of trade cycle: Hawtrey's monetary theory, Hayek's over investment theory, Keynes's view on trade cycles, Schumpeter's theory of innovation, Samuelson and Hicks multiplier accelerator model, Control of trade cycle.

##### UNIT 4

International Trade - Inter-regional and international trade, Comparative advantage cost theory, Opportunity cost theory and Heckscher Ohlin theory, International trade and economic development, Tariffs & import quotas, Concept of optimum tariff. Balance of trade & balance of payment., Concept & components of BOP, Equilibrium & disequilibrium in BOP, Relative merits & demerits of devaluation, Foreign trade multiplier.

##### UNIT 5

Functions and objectives of international monetary fund, World Bank and World Trade Organization, International monetary reforms and India, Foreign trade in India recent change in the composition and direction of foreign trade, India's balance of payment, Export promotion and import substitution in India. Multinational Corporation and India.

##### BASIC READING LIST -

## REVISED SYLLBUS

### B.A. Part- II (Economics)

**Subject : Money, Banking and Public Finance, Paper-II (Code: 0182)**

#### UNIT 1

Basic concepts : Money - meaning and functions, Gresham's law; Quantity theory of money- Cash transaction and cash balance approaches; Value of Money, Inflation, deflation and reflation, types, causes and effects on different sectors of the economy; Demand pull and cost push inflation; Measures to control inflation. Phillips curve, Concept of demonetization.

#### UNIT 2

Commercial banking- meaning and types; Functions of commercial banks, The process of credit creation, purpose and limitations; Liabilities and assets of banks; Evolution of commercial banking in India after independence; A critical appraisal of the progress of commercial banking after Nationalization, Functions of a central bank; Quantitative and qualitative methods of credit control; Bank rate policy; Open market operations; Variable reserve ratio and selective methods. Role and functions of the Reserve bank of India; Objectives and limitations of monetary policy with special reference to India.

#### UNIT 3

Meaning and scope of public finance; Distinction between private and public finance; public goods v/s private goods; The Principle of maximum social advantage; Role of the government in economic activities ; Public expenditure - Meaning, classification and principles of public expenditure; Trends in public expenditure and causes of growth of public expenditure in India.

#### UNIT 4

Sources of Public revenue; taxation - Meaning, Canons and classification of taxes; Division of tax burden. The benefit and ability to pay approaches; Impact and incidence of taxes; Taxable capacity; Effects of taxation; Characteristics of a good tax system; Equity and Justice in Taxation, Major trends in tax revenue of the Central and State Government in India.

#### UNIT 5

Public debt and financial administration: Sources of public borrowing, Effects of public debt. Methods of debt redemption. The public budget- Kinds of budget, Economic and functional classification of the budget; Preparation and passing of budget in India.

इकाई 1 : अन्तर्राष्ट्रीय राजनीति : अर्थ, प्रकृति, क्षेत्र ।

अन्तर्राष्ट्रीय राजनीति : अध्ययन उपागम — यथार्थवाद, आदर्शवाद, नवयथार्थवाद, विश्व व्यवस्था सिद्धान्त । राष्ट्रीय हित एवं राष्ट्रीय शक्ति : अर्थ, परिभाषा एवं तत्त्व ।

Unit 1 : International Politics : meaning, Nature, Scope. International Politics : Approaches to the study : Realism, Idealism, New realism, World System theory. National interest and National power: Meaning Definition and Elements.

इकाई 2 : अन्तर्राष्ट्रीय राजनीति के विभिन्न सिद्धान्त : व्यवस्था, खेल, निर्णय निर्माण, सौदेबाजी का सिद्धान्त ।

शक्ति संतुलन । सामूहिक सुरक्षा । निशस्त्रीकरण । शीतयुद्ध । राजनय ।

Unit 2 : Various theories of International Politics : System, Game, Decision making, Bargaining theory, Balance of Power, Collective Security, Disarmament, Cold war, Diplomacy.

इकाई 3 : भारत की विदेश नीति : निर्धारक तत्व, विशेषताएं । गुटनिश्चयता : अर्थ, विशेषताएं, प्रासंगिकता ।

Unit 3 : Foreign Policy of India : Determinating elements, characteristics. Non-alignment : meaning, features , relevance.

इकाई 4 : भारत का पड़ोसियों से सम्बंध — चीन, पाकिस्तान, नेपाल, श्रीलंका । भारत का महाशक्तियों से सम्बंध — संयुक्त राज्य अमेरिका, रूस, ब्रिटेन एवं फ्रांस

Unit 4 : Indias' relations with neighboring countries : China , Pakistan, Nepal, Sri lanka, Relations with Super Powers - USA, Russia, Britain and France.

इकाई 5 : अन्तर्राष्ट्रीय राजनीति के कुछ प्रमुख मुद्दे :

पर्यावरणवाद । अन्तर्राष्ट्रीय आतंकवाद । वैश्वीकरण । मानव अधिकार । परमाणविक निशस्त्रीकरण ।

Unit 5 : Some major issues of International Politics :

Environmentalism, International Terrorism, Globalisation, Human Rights , Nuclear Disarmament.

द्वितीय प्रश्नपत्र : लोक प्रशासन Paper : II : Public Administration

इकाई 1 : लोक प्रशासन : अर्थ, परिभाषा, प्रकृति, क्षेत्र । लोक प्रशासन और निजी प्रशासन । अध्ययन पद्धतियां । नवीन लोक प्रशासन । तुलनात्मक लोक प्रशासन ।

Unit 1 : Public Administration : meaning and definition, nature, scope. Public Administration and Private Administration. Method of Studies. New Public Administration. Comparative Public Administration.

इकाई 2 : संगठन के सिद्धान्त : पदसौपान, नियंत्रण का क्षेत्र, आदेश की एकता, प्रत्यायोजन । मुख्य कार्यपालिका । सूत्र एवं स्टाफ अभिकरण । विभागीय संगठन, लोक निगम । कार्मिक प्रशासन : भर्ती, पदोन्नति, प्रशिक्षण ।

Unit 2 : Principles of Organisation : Hierarchy, Span of Control, Unity of Command, Delegation. Chief Executive. Line and Staff Agencies. Departmental Organisation. Public Corporation. Personnel Administration : Recruitment, Promotion, Training.

इकाई 3 : विकास प्रशासन : प्रकृति, मुद्दे और विशेषताएं । रिग्स मॉडल । प्रशासन में नागरिक सहभागिता । सुशासन और ई शासन । संघ लोक सेवा आयोग ।

Unit 3 : Development Administration : Nature, Issues, Characteristics. Riggs Model. Public participation in Administration. Good Governance and e- Governance. Union Public Service Commission.

इकाई 4 : वित्तीय प्रशासन : बजट के सिद्धान्त । भारत में बजट प्रक्रिया । भारत में प्रशासनिक सुधार । प्रशासन पर कार्यपालिका, विधायी, न्यायिक और जन नियंत्रण ।

Unit 4 : Financial Administration: Principles of Budget. Budget procedure in India. Administrative reforms in India. Executive, Legislative, Judicial and Public Control on Administration.

इकाई 5 : प्रशासन में भ्रष्टाचार : आम्बुद्समैन, लोकपाल और लोक आयुक्त । वैश्वीकरण के युग में लोक प्रशासन । उदारीकरण । नीकरखाड़ी । लोक सम्पर्क । Corruption in Administration: Ombudsman, Lokpal and Lok Ayukta. Public Administration in the age of Globalisation. Liberalisation. Bureaucracy. Public Relation.

Revised syllabus  
SOCIOLOGY 2018-2019

B.A. PART-III  
PAPER - I

FOUNDATIONS OF SOCIOLOGICAL THOUGHT  
(Paper Code-0246)

- UNIT-I August Comte : The Law of Three Stages , Positivism, Hierarchy of Science.  
Durkheim: Social Solidarity and Suicide.
- UNIT-II Karl Marx : Dialectic Materialism , Class Struggle and Surplus value.  
Max Weber : Bureaucracy, Authority and the Protestant Ethic and the spirit of Capitalism.
- UNIT-III Pareto : Circulation of Elites and Logical and Nonlogical action.  
Spencer : Social Darwinism, super organic evolutions.
- UNIT-IV Thorstein Veblen: The Theory of Leisure Class, Theory of Social Change.  
R. K. Merton: Functionalism and Reference Group.
- UNIT-V Development of Sociological thought in India : -  
Mahatma Gandhi: Ahimsa, Satya Graha and Trusteeship.  
Radha kamal Mukherjee : The Concept of Value.

ESSENTIAL READINGS -

- 1 Barres, H.E. : Introduction to the sociology, Chicago the university of Chicago press 1959.
- 2 Coser, Lewis A.: Master of sociological thought, New York Harcourt Brace Jovanovich 1979.
- 3 Singh, Yogendra- Indian sociology: social conditioning and emerging trends. New Delhi Vistaar 1986.
- 4 Zeitlin, Irving-(Indian edition) Rethinking sociology: A critique of contemporary theory , Jorpur Rawl 1999.

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11/6/2018  
Head,

S.O.S. in Sociology & Social Work,  
Pt. Ravishankar Shukla University,  
Raipur. (C.G.)

**Revised syllabus**  
**SOCIOLOGY 2018-2019**

B.A. PART-III  
PAPER-II  
METHODS OF SOCIAL RESEARCH  
(Paper Code-0247)

- UNIT-I **Social Research** : Meaning, Characteristics and Significance.  
Scientific methods , Hypothesis.
- UNIT-II **Qualitative Research** : Ethnography, Observation, Case Study, Content analysis.
- UNIT-III **Research design** : Exploatory , Descriptive, Explanatory, Experimental, and Diagnostic.
- UNIT-IV **Tools and Techniques of Social Research**: Social Survey, Sampling, Questionnaire, Interview - Schedule and Interview - Guide.
- UNIT-V **Social Statistics**: Meaning, Importance and Limitations.  
Graphs, Diagrams and Measures of Central Tendency- Mean, Mode, Median, Co-  
relation, Use of Computer in Social Research.

**ESSENTIAL READINGS –**

1. Young, P.V. (1977). *Scientific Social Surveys and Research*. Prentice Hall of India. New Delhi.
2. Bruce, C., & Margaret, M. (1993). *Approaches to Social Research*. New York: Oxford University Press.
3. Cohen, M., & Nagel, E. (1944). *An Introduction to Logic and Scientific Method*. New York: Harcourt, Brace & Company.
4. Forcese, D., & Richer, S. (1973). *Social Research Methods*. Cliffs: Englewood, Cliffs, NJ. Prentice Hall.
5. Moser, C.A. (1962). *Survey Methods in Social Research Investigation*. London: Heinemann, Printce Hall.
6. Goode, & Hatt. (1952). *Methods in Social Research*. New York: MCgrawHill Publishers.

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Head,  
S.O.S. in Sociology & Social Work,  
Pt. Ravishankar Shukla University,  
Raipur. (C.G.)

संशोधित पाठ्यक्रम  
बी. ए. भाग- 3  
हिन्दी साहित्य  
प्रथम प्रश्न पत्र  
जनपदीय भाषा- साहित्य (छत्तीसगढ़ी)  
(पेपर कोड- 0233)

प्रस्तावना-

हिन्दी केवल खड़ी बोली नहीं है, बल्कि एक बहुत बड़ा भाषिक समूह है। हिन्दी जगत में अनेक विभाषाएं, बोलियाँ और उपबोलियाँ विद्यमान हैं जिनमें सकल साहित्य सम्पदा है। इनके सम्यक अध्ययन और अन्वेषण की आवश्यकता है। जनपदीय भाषा छत्तीसगढ़ी निरन्तर विकास की ओर अग्रसर हो रही है अस्तु, इस भाषा का और इसमें रचित साहित्य का इतिहास- विकास स्पष्ट करते हुए इनसे संबंधित प्रमुख रचनाकारों का आलोचनात्मक अनुशीलन करना हिन्दी के वृहत्तर हित में होगा। छत्तीसगढ़ी भाषा का पाठ्यक्रम निम्न बिन्दुओं पर आधारित है-

- (क) छत्तीसगढ़ी भाषा का इतिहास- विकास
- (ख) छत्तीसगढ़ी भाषा में रचित साहित्य का इतिहास
- (ग) छत्तीसगढ़ी भाषा के प्रमुख प्राचीन एवं अर्वाचीन रचनाकारों की कृतियों का अध्ययन।

पाठ्य विषय-

रचनाएँ-

- (1) प्राचीन कवि संत धर्मदास के 3 पद
  1. गुरु पड़या लागौ नाम लखा दीजौ हो।
  2. नैना आगे ख्याल घनेरा।
  3. भजन करी भाई रे, अइसन तन पाय के।  
(सन्दर्भ- धर्मदास के शब्दावली से उद्धृत)
- (2) लखनलाल गुप्त का गद्य-
  1. सोनपान  
(गद्य- पुस्तक 'सोनपान' के उद्धृत)
- (3) अर्वाचीन रचनाकार  
डॉ. सत्यभामा आडिल रचित गद्य
  1. सीख सीख के गोठ  
(गद्य पुस्तक 'गोठ' के उद्धृत)
- (4) डॉ. विनय पाठक की कविताएँ-
  1. तँय उठथस सुरुज उथे
  2. एक किसिम के नियाव  
('अकादसी और अनचिन्हार' पुस्तक से उद्धृत)

- (5) मुकुन्द कौशल- छत्तीसगढ़ी गजल  
"छै दिता के मनखे देखो..... से- मछरी मन लाख लेथे" तक  
(पुस्तक 'छत्तीसगढ़ी गजल' के पृष्ठ 17 से उद्धृत)

दुतापाठ के रचनाकार- (व्यक्तित्व एवं कृतित्व)

1. सुन्दर लाल शर्मा
2. कपिलनाथ कश्यप
3. रामचन्द्र देशमुख (रंगकर्मी)

अंक विभाजन- व्याख्याएं (3)	- 21 अंक
आलोचनात्मक प्रश्न (2)	- 24 अंक
लघुउत्तरीय प्रश्न (5)	- 15 अंक
वस्तुनिष्ठ (15)	- 15 अंक
कुल अंक	75

इकाई विभाजन

इकाई एक	- व्याख्या
इकाई दो	- प्राचीन एवं अर्वाचीन रचनाकार
इकाई तीन	- (अ) छत्तीसगढ़ी भाषा का इतिहास (ब) छत्तीसगढ़ी साहित्य का इतिहास
इकाई चार	- दुता पाठ के तीन रचनाकार
इकाई पाँच	- वस्तुनिष्ठ / (सम्पूर्ण पाठ्यक्रम से)



संशोधित पाठ्यक्रम  
बी.ए. भाग- 3  
द्वितीय प्रश्न पत्र  
हिन्दी भाषा- साहित्य का इतिहास तथा काव्यांग विवेचन  
(पेपर कोड- 0234)

प्रस्तावना-

हिन्दी भाषा का इतिहास जितना प्राचीन है, उतना ही शुद्ध- गहन भी। इसमें रचित साहित्य ने लगभग डेढ़ हजार वर्षों का इतिहास पूरा कर लिया है इसलिए हिन्दी भाषा और साहित्य के ऐतिहासिक विवेचन की बड़ी आवश्यकता है। इसी के साथ- साथ हिन्दी ने अपना जो स्वतंत्र साहित्य शास्त्र निर्मित किया है, उसे भी रूपायित करने की आवश्यकता है। इसके संज्ञान द्वारा विद्यार्थी की मर्मग्राहिणी प्रतिभा का विकास होगा और ऐतिहासिक परिप्रेक्ष्य में शुद्ध साहित्यिक विवेक का सन्निवेश होगा।

पाठ्य विषय-

(क) हिन्दी भाषा का स्वरूप विकास- हिन्दी की उत्पत्ति, हिन्दी की मूल आकर भाषाएँ तथा विभिन्न विभाषाओं का विकास। हिन्दी भाषा के विभिन्न रूप-

1. बोलचाल की भाषा
2. रचनात्मक भाषा
3. राष्ट्रभाषा
4. राजभाषा
5. सम्पर्क भाषा
6. संचार भाषा

हिन्दी का शब्द भण्डार- तत्सम, तदभव, देशज, आगत शब्दावली।

(ख) हिन्दी साहित्य का इतिहास - आदिकाल, पूर्व मध्यकाल, उत्तर मध्यकाल और आधुनिक काल की सामाजिक, सांस्कृतिक पृष्ठभूमि, प्रमुख युग प्रवृत्तियाँ, विशिष्ट रचनाकार और उनकी प्रतिनिधि कृतियाँ, साहित्यिक विशेषताएँ।

(ग) काव्यांग

- काव्य का स्वरूप एवं प्रयोजन।

रस के विभिन्न भेद, विभिन्न अंग, विभाषादि तथा उदाहरण।

प्रमुख 5 छंद

- दोहा, सोरठा, चौपाई, कुण्डलियाँ, सवैया।

शब्दालंकार

- अनुप्रास, यमक, श्लेष, यक्योक्ति, पुररुक्ति प्रकाश।

अर्थालंकार

- उपमा, रूपक, उत्प्रेक्षा, अतिशयोक्ति, भातिमान।

संदर्भ ग्रन्थ-

- (1) हिन्दी साहित्य का इतिहास संपादक- डॉ. सुशील त्रिवेदी व बाबूलाल शुक्ल (प्रकाशक- म. प्र. उ. शि. अनुदान आयोग)
- (2) राजभाषा हिन्दी- मलिक मोहम्मद (प्रभात प्रकाशन दिल्ली)

(3) हिन्दी भाषा- डॉ. भोलानाथ तिवारी।

अंक विभाजन-

आलोचनात्मक (4)	- 44 अंक
लघुउत्तरीय प्रश्न (4)	- 16 अंक
वस्तुनिष्ठ प्रश्न (15)	- 15 अंक
कुल अंक- 75 अंक	

इकाई विभाजन-

- इकाई- 1 हिन्दी भाषा का स्वरूप- विकास- (खण्ड- 'क')  
इकाई- 2 हिन्दी का शब्द भण्डार- (खण्ड 'क' का अंतिम भाग)  
इकाई- 3 हिन्दी साहित्य का इतिहास- (खण्ड- ख)  
इकाई- 4 काव्यांग- रस, छंद, अंलकार (भाग- ग)  
इकाई- 5 लघुउत्तरीय एवं वस्तुनिष्ठ प्रश्न (सम्पूर्ण पाठ्यक्रम से)

## REVISED SYLLBUS

### B. A. Part- III (Economics)

**Subject : Development and Environmental Economics, Paper-I (Paper Code:0242)**

#### UNIT 1

Economic Growth and Development : Factor affecting economic growth (Labour, capital and technology), Developed and under developed Economy, Poverty-absolute & relative, Marxian model of Economic Growth, Mahalanobis Model of Economic Growth. Balanced and unbalanced growth.

#### UNIT 2

Problems of Population and growth pattern of population. Theory of demographic transition. Population, poverty and environment. Schumpeter's theory of economic growth, Theory of Big-Push, Nelson's theory of low-level income equilibrium trap, Theory of Critical minimum efforts,

#### UNIT 3

Harrod and Domar growth model, Solow's model of economic growth, Meades Neo classical models, Mrs. Joan Robinson's growth model, A. Lewis theory of unlimited supply of labour.

#### UNIT 4

Environment: Environmental and use, environmental disruption as an allocation, problem. valuation of environmental damages- land, water, air & forest, prevention control and abatement of pollution, choice of policy instruments in developing countries, environmental legislation, indicators of sustainable development, environmental accounting

#### UNIT 5

Concept of Intellectual Capital : Food Security, Education, Health & Nutrition, Role of agriculture in economic development, Land reforms, Efficiency & Productivity in Agriculture, new technology & Sustainable agriculture, Globalization & agriculture growth, the choice of technique appropriate technology & employment.

Reference :-

## REVISED SYLLBUS

### B.A. Part- III (Economics)

**Subject : Statistical Methods, Paper-II, ( Paper Code: 0243)**

#### UNIT 1 :-

Statistics : Definition of Statistics, Importance and Limitations of Statistics, Importance of Statistics in Economics, Statistical investigation, Census and sampling methods of statistical investigation, Statistical data, Collections of Data, Primary & Secondary Data.

#### UNIT 2

Measuring of Central Tendency: Mean, Median, Mode, measures of Skewness, Probability-basic concepts meaning and definitions

#### UNIT 3

Dispersion : Meaning of Dispersion, Methods of measuring Dispersion, Range, Quartiles Deviation, Mean Deviation, Coefficient of Mean Deviation, Standard Deviation.

#### UNIT 4

Correlation Analysis : Meaning and types of correlation, Degree of correlation, Coefficient of correlation-Karl Pearson's Method, Spearman's Rank Difference Method. Probable error and standard error.

#### UNIT 5

Index Number- Methods of constructing of Index Numbers, Fisher's methods; Drobish-Bowles method, Paasches method, Laspeyres method, Consumer price index numbers, Reversal test, Circular Test, Time series analysis-Meaning, Components of time series, Measurement of long term trend by average method.

#### Reference :-

1. Shukla, S.M. and S.P. Sahay – "Quantitative Methods" Sahitya Bhawan Publication, Agra.
2. Agrawal, D.R., "Quantitative Methods", Vrinda Publications (P) Ltd.
3. Sancheti, D.C., "Quantitative Methods", Sultanchand and Sons, New Delhi.

## NEW CURRICULUM OF B.Sc. PART I

### CHEMISTRY

The new curriculum will comprise of Three theory papers of 33, 33 and 34 marks each and practical work of 50 marks. The curriculum is to be completed in 180 working days as per the UGC norms & conforming to the directives of the Govt. of Chhattisgarh. The theory papers are of 60 hrs each duration and the practical work of 180 hrs duration.

### PAPER I

### INORGANIC CHEMISTRY

M.M.33

#### UNIT-I

##### A. ATOMIC STRUCTURE

Bohr's theory, its limitation and atomic spectrum of hydrogen atom. General idea of de-Broglie matter-waves, Heisenberg uncertainty principle, Schrödinger wave equation, significance of  $\Psi$  and  $\Psi^2$ , radial & angular wave functions and probability distribution curves, quantum numbers, Atomic orbital and shapes of s, p, d orbitals, Aufbau and Pauli exclusion principles, Hund's Multiplicity rule, electronic configuration of the elements.

##### B. PERIODIC PROPERTIES

Detailed discussion of the following periodic properties of the elements, with reference to s and p-block. Trends in periodic table and applications in predicting and explaining the chemical behavior.

- Atomic and ionic radii,
- Ionization enthalpy,
- Electron gain enthalpy,
- Electronegativity, Pauling's, Mulliken's, Allred Rochow's scales.
- Effective nuclear charge, shielding or screening effect, Slater rules, variation of effective nuclear charge in periodic table.

#### UNIT-II

##### CHEMICAL BONDING I

**Ionic bond:** Ionic Solids - Ionic structures, radius ratio & co-ordination number, limitation of radius ratio rule, lattice defects, semiconductors, lattice energy Born- Haber cycle, Solvation

energy and solubility of ionic solids, polarising power & polarisability of ions, Fajans rule, Ionic character in covalent compounds: Bond moment and dipole moment, Percentage ionic character from dipole moment and electronegativity difference, Metallic bond-free electron, Valence bond & band theories.

### UNIT-III

#### CHEMICAL BONDING II

**Covalent bond:** Lewis structure, Valence bond theory and its limitations, Concept of hybridization, Energetics of hybridization, equivalent and non-equivalent hybrid orbitals. Valence shell electron pair repulsion theory (VSEPR), shapes of the following simple molecules and ions containing lone pairs and bond pairs of electrons:  $\text{H}_2\text{O}$ ,  $\text{NH}_3$ ,  $\text{PCl}_3$ ,  $\text{PCl}_5$ ,  $\text{SF}_6$ ,  $\text{H}_3\text{O}^+$ ,  $\text{SF}_4$ ,  $\text{ClF}_3$ , and  $\text{ICl}_2^-$  Molecular orbital theory. Bond order and bond strength, Molecular orbital diagrams of diatomic and simple polyatomic molecules  $\text{N}_2$ ,  $\text{O}_2$ ,  $\text{F}_2$ ,  $\text{CO}$ ,  $\text{NO}$ .

### UNIT-IV

#### A. s-BLOCK ELEMENTS

General concepts on group relationships and gradation properties, Comparative study, salient features of hydrides, solvation & complexation tendencies including their function in biosystems and introduction to alkyl & aryls, Derivatives of alkali and alkaline earth metals

#### B. p-BLOCK ELEMENTS

General concepts on group relationships and gradation properties. Halides, hydrides, oxides and oxyacids of Boron, Aluminum, Nitrogen and Phosphorus. Boranes, borazines, fullerenes, graphene and silicates, interhalogens and pseudohalogens.

### UNIT-V

#### A CHEMISTRY OF NOBLE GASES

Chemical properties of the noble gases, chemistry of xenon, structure, bonding in xenon compounds

#### B. THEORETICAL PRINCIPLES IN QUALITATIVE ANALYSIS ( $\text{H}_2\text{S}$ SCHEME)

Basic principles involved in the analysis of cations and anions and solubility products, common ion effect. Principles involved in separation of cations into groups and choice of group reagents. Interfering anions (fluoride, borate, oxalate and phosphate) and need to remove them after Group II.

## REFERENCE BOOKS:

1. Lee, J. D. Concise Inorganic Chemistry ELBS, 1991.
2. Douglas, B.E. and McDaniel, D.H. Concepts & Models of Inorganic Chemistry Oxford, 1970
3. Atkins, P.W. & Paula, J. Physical Chemistry, 10th Ed., Oxford University Press, 2014.
4. Day, M.C. and Selbin, J. Theoretical Inorganic Chemistry, ACS Publications, 1962.
5. Rodger, G.E. Inorganic and Solid State Chemistry, Cengage Learning India Edition, 2002.
6. Puri, B. R., Sharma, L. R. and Kalia, K. C., Principles of Inorganic Chemistry, Milestone Publishers/ Vishal Publishing Co.; 33rd Edition 2016
7. Madan, R. D. Modern Inorganic Chemistry, S Chand Publishing, 1987.

## PAPER: II

### ORGANIC CHEMISTRY

#### UNIT-I BASICS OF ORGANIC CHEMISTRY

Hybridization, Shapes of molecules, Influence of hybridization on bond properties. Electronic Displacements: Inductive, electromeric, resonance and mesomeric effects, hyperconjugation and their applications; Dipole moment. Electrophiles and Nucleophiles; Nucleophilicity and basicity; Homolytic and Heterolytic cleavage, Generation, shape and relative stability of Carbocations, Carbanions, Free radicals, Carbenes and Nitrenes. Introduction to types of organic reactions: Addition, Elimination and Substitution reactions.

#### UNIT-II INTRODUCTION TO STEREOCHEMISTRY

Optical Isomerism: Optical Activity, Specific Rotation, Chirality/Asymmetry, Enantiomers, Molecules with two or more chiral-centres, Diastereoisomers, meso compounds, Relative and absolute configuration: Fischer, Newmann and Sawhorse Projection formulae and their interconversions; Erythrose and threose, D/L, d/l system of nomenclature, Cahn-Ingold-Prelog system of nomenclature (C.I.P rules), R/S nomenclature. Geometrical isomerism: cis-trans, syn-anti and E/Z notations.

#### UNIT-III CONFORMATIONAL ANALYSIS OF ALKANES

Conformational analysis of alkanes, ethane, butane, cyclohexane and sugars. Relative stability and Energy diagrams. Types of cycloalkanes and their relative stability, Baeyer strain theory: Theory of strainless rings, Chair, Boat and Twist boat conformation of cyclohexane with energy diagrams; Relative stability of mono-substituted cycloalkanes and disubstituted cyclohexane.

## UNIT-IV CHEMISTRY OF ALIPHATIC HYDROCARBONS

### A. Carbon-Carbon sigma ( $\sigma$ ) bonds

Chemistry of alkanes: Formation of alkanes, Wurtz Reaction, Wurtz-Fittig Reaction, Free radical substitutions: Halogenation-relative reactivity and selectivity.

### B. Carbon-Carbon Pi ( $\pi$ ) bonds:

Formation of alkenes and alkynes by elimination reactions, Mechanism of E1, E2, E1cb reactions. Saytzeff and Hofmann eliminations.

Reactions of alkenes: Electrophilic additions and mechanisms (Markownikoff/ Anti - Markownikoff addition), mechanism of oxymercuration-demercuration, hydroboration-oxidation, ozonolysis, reduction (catalytic and chemical), syn and anti-hydroxylation (oxidation). 1,2-and 1,4-addition reactions in conjugated dienes and, Diels-Alder reaction; Allylic and benzylic bromination and mechanism, e.g. propene, 1-butene, toluene, ethyl benzene.

Reactions of alkynes: Acidity, Electrophilic and Nucleophilic additions. Hydration to form carbonyl compounds, Alkylation of terminal alkynes.

## UNIT-V AROMATIC HYDROCARBONS

Aromaticity: Hückel's rule, aromatic character of arenes, cyclic carbocations/ carbanions and heterocyclic compounds with suitable examples. Electrophilic aromatic substitution: halogenation, nitration, sulphonation and Friedel-Craft's alkylation/acylation with their mechanism. Directive effects of the groups.

### REFERENCE BOOKS:

1. Morrison, R. N. & Boyd, R. N. Organic Chemistry, Dorling Kindersley (India) Pvt. Ltd.(Pearson Education).
2. Finar, I. L. Organic Chemistry (Volume 1), Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
3. Finar, I. L. Organic Chemistry (Volume 2: Stereochemistry and the Chemistry of Natural Products), Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
4. Eliel, E. L. & Wilen, S. H. Stereochemistry of Organic Compounds, Wiley: London, 1994.



5. Kalsi, P. S. Stereochemistry Conformation and Mechanism, New Age International, 2005.
6. McMurry, J.E. Fundamentals of Organic Chemistry, 7th Ed. Cengage Learning India Edition, 2013.
7. Organic Chemistry, Paula Y. Bruice, 2nd Edition, Prentice-Hall, International Edition (1998).
8. A Guide Book of Reaction Mechanism by Peter Sykes.

### PAPER - III

### PHYSICAL CHEMISTRY

M.M.34

#### UNIT-I

##### MATHEMATICAL CONCEPTS FOR CHEMIST

Basic Mathematical Concepts: Logarithmic relations, curve sketching, linear graphs, Properties of straight line, slope and intercept, Functions, Differentiation of functions, maxima and minima; integrals; ordinary differential equations; vectors and matrices; determinants; Permutation and combination and probability theory, Significant figures and their applications.

#### UNIT-II

##### GASEOUS STATE CHEMISTRY

Kinetic molecular model of a gas: postulates and derivation of the kinetic gas equation; collision frequency; collision diameter; mean free path; Maxwell distribution and its use in evaluating molecular velocities (average, root mean square and most probable) and average kinetic energy, law of equipartition of energy, degrees of freedom and molecular basis of heat capacities. Joule Thompson effect, Liquification of Gases.

Behaviour of real gases: Deviations from ideal gas behaviour, compressibility factor ( $Z$ ), and its variation with pressure and temperature for different gases. Causes of deviation from ideal behaviour: van der Waals equation of state, its derivation and application in explaining real gas behaviour, calculation of Boyle temperature. Isotherms of real gases and their comparison with van der Waals isotherms, continuity of states, critical state, relation between critical constants and van der Waals constants, law of corresponding states.

#### UNIT-III

#### **A. LIQUID STATE CHEMISTRY**

Intermolecular forces, magnitude of intermolecular force, structure of liquids, Properties of liquids, viscosity and surface tension.

#### **B. COLLOIDS and SURFACE CHEMISTRY**

Classification, Optical, Kinetic and Electrical Properties of colloids, Coagulation, Hardy Schulze law, flocculation value, Protection, Gold number, Emulsion, micelles and types, Gel, Syneresis and thixotrophy, Application of colloids.

Physical adsorption, chemisorption, adsorption isotherms (Langmuir and Freundlich). Nature of adsorbed state. Qualitative discussion of BET.

### **UNIT-IV**

#### **SOLID STATE CHEMISTRY**

Nature of the solid state, law of constancy of interfacial angles, law of rational indices, Miller indices, elementary ideas of symmetry, symmetry elements and symmetry operations, qualitative idea of point and space groups, seven crystal systems and fourteen Bravais lattices; X-ray diffraction, Bragg's law, a simple account of rotating crystal method and powder pattern method. Crystal defects.

### **UNIT-V**

#### **A. CHEMICAL KINETICS**

Rate of reaction, Factors influencing rate of reaction, rate law, rate constant, Order and molecularity of reactions, rate determining step, Zero, First and Second order reactions, Rate and Rate Law, methods of determining order of reaction, Chain reactions.

Temperature dependence of reaction rate, Arrhenius theory, Physical significance of Activation energy, collision theory, demerits of collision theory, non mathematical concept of transition state theory.

#### **B. CATALYSIS**

Homogeneous and Heterogeneous Catalysis, types of catalyst, characteristic of catalyst, Enzyme catalysed reactions, Micellar catalysed reactions, Industrial applications of Catalysis.

#### **REFERENCE BOOKS:**

1. Atkins, P. W. & Paula, J. de Atkin's Physical Chemistry 10th Ed., Oxford University Press (2014).

2. Ball, D. W. Physical Chemistry Thomson Press, India (2007).
3. Castellan, G. W. Physical Chemistry 4th Ed. Narosa (2004).
4. Mortimer, R. G. Physical Chemistry 3rd Ed. Elsevier: NOIDA, UP (2009).
5. Engel, T. & Reid, P. Physical Chemistry 3rd Ed. Pearson (2013).
6. Puri, B.R., Sharma, L. R. and Pathania, M.S., Principles of Physical Chemistry, Vishal Publishing Co., 47th Ed. (2016).
7. Bahl, A., Bahl, B.S. and Tuli, G.D. Essentials of Physical Chemistry, S Chand Publishers (2010).
8. Rakshit P.C., Physical Chemistry, Sarat Book House Ed. (2014).
9. Singh B., Mathematics for Chemist, Pragati Publications.

## PAPER - IV LABORATORY COURSE

### INORGANIC CHEMISTRY

A. Semi-micro qualitative analysis (using  $H_2S$  or other methods) of mixtures - not more than four ionic species (two anions and two cations, excluding interfering, insoluble salts) out of the following:

Cations :  $NH_4^+$ ,  $Pb^{2+}$ ,  $Bi^{3+}$ ,  $Cu^{2+}$ ,  $Cd^{2+}$ ,  $Fe^{3+}$ ,  $Al^{3+}$ ,  $Co^{2+}$ ,  $Ni^{2+}$ ,  $Mn^{2+}$ ,  $Zn^{2+}$ ,  $Ba^{2+}$ ,  $Sr^{2+}$ ,  $Ca^{2+}$ ,  $Na^+$   
 Anions :  $CO_3^{2-}$ ,  $S^{2-}$ ,  $SO_3^{2-}$ ,  $S_2O_3^{2-}$ ,  $NO_2^-$ ,  $CH_3COO^-$ ,  $Cl^-$ ,  $Br^-$ ,  $I^-$ ,  $NO_3^-$ ,  $SO_4^{2-}$

(Spot tests may be carried out wherever feasible)

#### B. Acid-Base Titrations

- Standardization of sodium hydroxide by oxalic acid solution.
- Determination of strength of HCl solution using sodium hydroxide as intermediate.
- Estimation of carbonate and hydroxide present together in mixture.
- Estimation of carbonate and bicarbonate present together in a mixture.
- Estimation of free alkali present in different soaps/detergents.

#### C. Redox Titrations

- Standardization of  $KMnO_4$  by oxalic acid solution.
- Estimation of Fe(II) using standardized  $KMnO_4$  solution.
- Estimation of oxalic acid and sodium oxalate in a given mixture.
- Estimation of Fe(II) with  $K_2Cr_2O_7$  using internal (diphenylamine, anthranilic acid) and external indicator.

#### D. Iodo / Iodimetric Titrations

- Estimation of Cu(II) and  $K_2Cr_2O_7$  using sodium thiosulphate solution iodimetrically.
- Estimation of (a) arsenite and (b) antimony iodimetrically.

- Estimation of available chlorine in bleaching powder iodometrically.
- Estimation of Copper and Iron in mixture by standard solution of  $K_2Cr_2O_7$  using sodium thiosulphate solution as titrants.

## ORGANIC CHEMISTRY

1. Demonstration of laboratory Glasswares and Equipments.
2. Calibration of the thermometer.  $80^\circ-82^\circ$  (Naphthalene),  $113.5^\circ-114^\circ$  (Acetanilide),  $132.5^\circ-133^\circ$  (Urea),  $100^\circ$  (Distilled Water.)
3. Purification of organic compounds by crystallization using different solvents.
  - Phthalic acid from hot water (using fluted filter paper and stemless funnel).
  - Acetanilide from boiling water.
  - Naphthalene from ethanol.
  - Benzoic acid from water.
4. Determination of the melting points of organic compounds.  
 Naphthalene  $80^\circ-82^\circ$ , Benzoic acid  $121.5^\circ-122^\circ$ , Urea  $132.5^\circ-133^\circ$ , Succinic acid  $184.5^\circ-185^\circ$ , Cinnamic acid  $132.5^\circ-133^\circ$ , Salicylic acid  $157.5^\circ-158^\circ$ , Acetanilide  $113.5^\circ-114^\circ$ , m-Dinitrobenzene  $90^\circ$ , p-Dichlorobenzene  $52^\circ$ , Aspirin  $135^\circ$ .
5. Effect of impurities on the melting point – mixed melting point of two unknown organic compounds.
  - Urea – Cinnamic acid mixture of various compositions (1:4, 1:1, 4:1).
6. Determination of boiling point of liquid compounds. (boiling point lower than and more than  $100^\circ C$  by distillation and capillary method).
  - Ethanol  $78^\circ$ , Cyclohexane  $81.4^\circ$ , Toluene  $110.6^\circ$ , Benzene  $80^\circ$ .
- i. Distillation (Demonstration)
  - Simple distillation of ethanol-water mixture using water condenser.
  - Distillation of nitrobenzene and aniline using air condenser.
- ii. Sublimation
  - Camphor, Naphthalene, Phthalic acid and Succinic acid.
- iii. Decolorisation and crystallization using charcoal.
  - Decolorisation of brown sugar with animal charcoal using gravity filtrations crystallization and decolorisation of impure naphthalene (100 g of naphthalene mixed with 0.3 g of Congo red using 1 g of decolorizing carbon) from ethanol.
7. Qualitative Analysis

Detection of elements (N, S and halogens) and functional groups (Phenolic, Carboxylic, Carbonyl, Esters, Carbohydrates, Amines, Amides, Nitro and Anilide) in simple organic compounds.

## PHYSICAL CHEMISTRY

### 1. Surface tension measurements.

- Determine the surface tension by (i) drop number (ii) drop weight method.
- Surface tension composition curve for a binary liquid mixture.

### 2. Viscosity measurement using Ostwald's viscometer.

- Determination of viscosity of aqueous solutions of (i) sugar (ii) ethanol at room temperature.
- Study of the variation of viscosity of sucrose solution with the concentration of solute.
- Viscosity Composition curve for a binary liquid mixture.

### 3. Chemical Kinetics

- To determine the specific rate of hydrolysis of methyl/ethyl acetate catalysed by hydrogen ions at room temperature.
- To study the effect of acid strength on the hydrolysis of an ester.
- To compare the strengths of HCl & H<sub>2</sub>SO<sub>4</sub> by studying the kinetics of hydrolysis of ethyl acetate.

### 4. Colloids

- To prepare colloidal solution of silver nanoparticles (reduction method) and other metal nanoparticles using capping agents.

**Note: Experiments may be added/ deleted subject to availability of time and facilities**

**Zoology**  
**B.Sc. Part I 2018-19**  
**Paper I**  
**(Cell Biology and Non-chordata)**

**Unit: I**

1. The cell (Prokaryotic and Eukaryotic)
2. Organization of Cell: Extra-nuclear and nuclear (Plasma membrane, Mitochondria, Endoplasmic reticulum, Golgi body, Ribosome and Lysosome).
3. Nucleus, Chromosomes, DNA and RNA

**Unit: II**

1. Cell division (Mitosis and Meiosis).
2. An elementary idea of Cancer cells And Cell transformation.
3. An elementary idea of Immunity: Innate & Acquired Immunity, Lymphoid organs, Cells of Immune System, Antigen, antibody and their interactions

**Unit: III**

- General characters and classification of Phylum Protozoa, Porifera, and Coelenterata up to order.
- 2. Protozoa: Type study - Paramecium,
- 2. Porifera: Type study - Sycon.
- 3. Coelenterata: Type study - Obelia

**Unit: IV**

- General characters and classification of Phylum Platyhelminthes, Nematelminthes, Annelida and Arthropoda up to order.
- 2. Platyhelminthes and Nematelminthes: Type Study – Fasciola, Ascaris
- 3. Annelida: Type Study - Pheretima.
- 4. Arthropoda: Type Study - Palaemone.

**Unit: V**

- General characters and classification of Phylum Mollusca and Echinodermata up to order.
- 2. Mollusca: Type Study - Pila.
- 3. Echinodermata- Type Study- Asterias (Starfish).

**Zoology**  
**B.Sc. Part I 2018-19**  
**Paper II**  
**(Chordata and Embryology)**

**Unit:I**

1. Classification of Hemichordata
2. Hemichordata- Type study-Balanoglossus
3. Classification of Chordates upto orders..
4. Protochordata-Type study - Amphioxus.
5. A comparative account of Petromyzon and Myxine.

**Unit-II**

1. Fishes-Skin & Scales, migration in fishes, Parental care in fish.
2. Amphibia-Parental care and Neoteny.
3. Reptilia- Poisonous & Non-poisonous Snakes, Poison apparatus, snake venom and Extinct Reptiles

**Unit:-III**

1. Birds- Flight Adaptation, Migration, and Perching mechanism, Discuss-Birds are glorified reptiles.
2. Mammals-Comparative account of Prototheria, Metatheria, Eutheria and Affinities.
3. Aquatic Mammals and their adaptations.

**Unit:IV**

1. **Fertilization**
2. Gametogenesis, Structure of gamete and Types of eggs
3. Cleavage
4. Development of Frog up to formation of three germ layers.
5. Parthenogenesis

**Unit:V**

1. Embryonic induction, Differentiation and Regeneration.
2. Development of Chick (a) up to formation of three germ layers, (2) Extra-embryonic membranes.
3. Placenta in mammals.

**Zoology**  
**B.Sc. Part I 2018-19**  
**Practical**

The practical work will, in general be based on the syllabus prescribed in theory and the candidates will be required to show knowledge of the following:-

- Dissection of Earthworm, Cockroach, Palaemon and Pila
- Minor dissection—appendages of Prawn & hastate plate, mouth parts of insects, radulla of Pila.

**(Alternative methods: By Clay/Thermacol/drawing/Model etc.)**

- Adaptive characters of Aquatic, terrestrial, aerial and desert animals.
- Museum specimen invertebrate
- Slides- Invertebrates, frog embryology, Chick embryology and cytology,

**Scheme of Practical Exam**

**Time: 3hrs**

1. Major Dissection	10 Marks
2. Minor Dissection	05 Marks
3. Comments on Excercise based on Adaptation	04 Marks
4. Cytological Preparation	05 Marks
5. Spots-8 (Slides-4, Specimens-4)	16 Marks
6. Sessional	10 Marks



**B.Sc. - I (BOTANY) PAPER-I**  
**BACTERIA, VIRUSES, FUNGI, LICHENS AND ALGAE**

**UNIT-I**

**VIRUSES:** General characteristics, types of viruses based on structure and genetic material. Multiplication of viruses (General account), Lytic and Lysogenic cycle. Economic importance. Structure and multiplication of Bacteriophages. General account of Viroids, Virusoids, Prions, and Cyanophages. Mycorrhiza-Types and Significance.

**UNIT -II**

**BACTERIA:** General characteristics and classification (on the basis of morphology), fine structure of bacterial cell, Gram positive and Gram negative bacteria, mode of nutrition and reproduction vegetative, asexual and recombination (Conjugation, transformation and transduction), Economic importance. Microbial Biotechnology, *Rhizobium*, *Azotobacter*, *Anabena*.

**UNIT-III**

**FUNGI:** General account of habit and habitat, structure (range of thallus organization), cell wall composition, nutrition and reproduction in fungi. Heterothallism and Parasexuality. Outlines of classification of fungi. Economic importance of fungi. Life cycles of *Saprolegnia*, *Albugo*, *Aspergillus*, *Peziza*, *Agaricus*, *Ustilago*, *Puccinia*, *Alternaria* and *Cercospora*. VAM Fungi

**UNIT-IV**

**ALGAE:** Algae: General characters, range of thallus organization, Gaidukov phenomenon, reproduction, life cycle patterns and economic importance. Classification, Systematic position, occurrence, structure and life cycle of following genera : *Nostoc*, *Gloeocapsa*, *Volvox*, *Oedogonium*, *Vaucheria*, *Chara*, *Ectocarpus*, *Polysiphonia*.

**UNIT -V**

Lichens- General account, types, structure, nutrition, reproduction and economic importance. Mycoplasma: Structure and importance. Blue Green Algae (BGA) in nitrogen economy of soil and reclamation of Ushar land. Mushroom Biotechnology

**Books Recommended:**

- Dubey R.C. and Maheshwari D.K. *A text book of Microbiology*, S. Chand Publishing, New Delhi  
Presscott, L. Harley, J. and Klein, D. *Microbiology*, 7<sup>th</sup> edition, Tata Mc Graw-Hill Co. New Delhi.  
Sharma P.D., *Microbiology and Plant pathology*, Rastogi Publication. New Delhi.

**B.Sc.-I (BOTANY) PAPER -II**  
**(BRYOPHYTES, PTERIDOPHYTES, GYMNOSPERMS AND**  
**PALAEOBOTANY)**

**UNIT -I**

**BRYOPHYTA:** General characteristics, affinities, range of thallus organization, general classification and economic & ecological importance, Systematic position, occurrence, morphology anatomy and reproductive structure in *Riccia*, *Marchantia*, *Pellia*, *Anthoceros*, *Funaria*. Vegetative reproduction in Bryophytes, Evolution of sporophytes.

**UNIT-II**

**PTERIDOPHYTES:** General characteristics, affinities, economic importance and classification, Heterospory and seed habit, stellar system in Pteridophytes, Aposory and apogamy, Telome theory, *Azolla* as Biofertilizer.

**UNIT-III**

Systematic position, occurrence. Morphology, anatomy and reproductive structure of *Psilotum*, *Lycopodium*, *selaginella*, *Equisetum*, *Marsilea*.

**UNIT-IV**

Gymnosperm: General characteristics, affinities, economic importance and classification, Morphology, anatomy and reproduction in *Cycas*, *Pinus* and *Ephedra*.

**UNIT-V**

**PALAEOBOTANY:** Geological time scale, types of fossils and fossilization, Rhynia, study of some fossil gymnosperms. *Lygenopteris*

**Books Recommended:**

Parihar, N.S. *The Biology and Morphology of Pteridophytes*, Central Book Depot, Allahabad.

Parihar, N.S. *An introduction to Bryophyta Vol.I: Bryophytes* Central Book Depot, Allahabad.

Sambamurty, AVSS, *A textbook of Bryophytes, Pteridophytes, Gymnosperms and Palaeobotany*, IK International Publishers.

## B.Sc. I (BOTANY)

### PRACTICAL

Study of external (Morphological) and internal (microscopic/anatomical) features of representative genera given in the theory.

1. Algae: Gloeocapsa, Scytonema, Gloeotrichia, Volvox, Oedogonium, Vaucheria, Chara, Ectocarpus, Sargassum, Batrachospermum
2. Gram staining
3. Fungi: Albugo, Aspergillus, Peziza, Agaricus, Puccinia, Alternaria and Cercospora
4. Bryophyta: Riccia, Marchantia, Pellia, Anthoceros, Sphagnum, Funaria
5. Pteridophyta: Lycopodium, Selaginella, Equisetum, Marsilea.
6. Gymnosperm: Cycas, Pinus, Ephedra.

### PRACTICAL SCHEME

TIME: 4 Hrs.

M.M. : 50

1. Algae/Fungi/Gram Staining	10
2. Bryophyta/Pteridophyta	10
3. Gymnosperm	10
4. Spotting	10
5. Viva-Voce	05
6. Sessional	05



(Dr. J.N. Verma)

Proff. & Head

Govt. D.B. Girls PG College

Raipur, (C.G.)



(Dr. Rekha Pimpalgaonkar)

Proff. & Head

Govt. N PG Science College

Raipur, (C.G.)



(Dr. Ranjana Shrivastava)

Proff. & Head

Govt. VYTPG Science College

Raipur, (C.G.)



(Mrs. Sanchal Moghe)

Govt. Bilasa Girls College, Bilaspur



(Mr. Shivakant Mishra)

(Mr. Sudheer Tiwari)

## NEW CURRICULUM OF B.Sc. PART II

### CHEMISTRY

The new curriculum will comprise of three papers of 33, 33 and 34 marks each and practical work of 50 marks. The Curriculum is to be completed in 180 working days as per UGC norms and conforming to the directives of Govt. of Chhattisgarh. The theory papers are of 60 hrs. each duration and practical work of 180 hrs duration.

#### Paper – I INORGANIC CHEMISTRY

60 Hrs., Max Marks 33

#### UNIT-I

##### CHEMISTRY OF TRANSITION SERIES ELEMENTS

Transition Elements: Position in periodic table, electronic configuration, General Characteristics, viz., atomic and ionic radii, variable oxidation states, ability to form complexes, formation of coloured ions, magnetic moment  $\mu_{so}$  (spin only) and  $\mu_{eff}$  and catalytic behaviour. General comparative treatment of 4d and 5d elements with their 3d analogues with respect to ionic radii, oxidation states and magnetic properties.

#### UNIT-II

**A. Oxidation and Reduction:** Redox potential, electrochemical series and its applications, Principles involved in extraction of the elements.

**B. COORDINATION COMPOUNDS:** Werner's theory and its experimental verification, IUPAC nomenclature of coordination compounds, isomerism in coordination compounds. Stereochemistry of complexes with 4 and 6 coordination numbers. Chelates, polynuclear complexes.

#### UNIT-III

##### COORDINATION CHEMISTRY

Valence bond theory (inner and outer orbital complexes), electroneutrality principle and back bonding. Crystal field theory, Crystal field splitting and stabilization energy, measurement of  $10 Dq$  ( $\Delta_o$ ), CFSE in weak and strong fields, pairing energies, factors affecting the magnitude of  $10 Dq$  ( $\Delta_o$ ,  $\Delta_t$ ). Octahedral vs. tetrahedral coordination.

#### UNIT-IV

##### A. CHEMISTRY OF LANTHANIDE ELEMENTS

Electronic structure, oxidation states and ionic radii and lanthanide contraction, complex formation, occurrence and isolation, lanthanide compounds.

##### B. CHEMISTRY OF ACTINIDES

General features and chemistry of actinides, chemistry of separation of Np, Pu and Am from uranium, similarities between the later actinides and the later lanthanides

#### UNIT-V

**A. ACIDS BASES :** Arrhenius, Bronsted-Lowry, conjugate acids and bases, relative strengths of acids and bases, the Lux-flood, solvent system and Lewis concepts of acids and bases.

#### **B. NON-AQUEOUS SOLVENTS**

Physical properties of a solvent, types of solvents and their general characteristics, reaction in non-aqueous solvents with reference to liquid ammonia and liquid sulphur dioxide, HF, H<sub>2</sub>SO<sub>4</sub>, Ionic liquids.

#### REFERENCE BOOKS

1. Basic Inorganic Chemistry, F. A. Cotton, G. Wilkinson and P. L. Gaus, Wiley
2. Concise Inorganic Chemistry, J. D. Lee, ELBS
3. Concepts of Models of Inorganic Chemistry, B. Douglas, D. Mc Daniel and J. Alexander, John Wiley.
4. Inorganic Chemistry, D. E. Shriver, P. W. Atkins and C. H. Langford, Oxford.
5. Inorganic Chemistry, W. W. Porterfield, Addison – Wiley.
6. Inorganic Chemistry, A. G. Sharp, ELBS.
7. Inorganic Chemistry, G. L. Miessler and D. A. Tarr, Prentice Hall.
8. Advanced Inorganic Chemistry, Satya Prakash.
9. Advanced Inorganic Chemistry, Agarwal and Agarwal
10. Advanced Inorganic Chemistry, Puri, Sharma, S. Naginchand
11. Inorganic Chemistry, Madan, S. Chand
12. Aadhunik Akarbanic Rasayan, A. K. Shrivastav & P. C. Jain, Goel Pub
13. Uchchattar Akarbanic Rasayan, satya Prakash & G. D. Tuli, Shyamal Prakashan
14. Uchchattar Akarbanic Rasayan, Puri & Sharma
15. Selected topic in Inorganic Chemistry by Madan Malik & Tali, S. Chand.

### UNIT-I

#### CHEMISTRY OF ORGANIC HALIDES

Alkyl halides: Methods of preparation, nucleophilic substitution reactions –  $S_N1$ ,  $S_N2$  and  $S_N1'$  mechanisms with stereochemical aspects and effect of solvent etc.; nucleophilic substitution, elimination reactions.

Aryl halides: Preparation, including preparation from diazonium salts, Nucleophilic Aromatic Substitution;  $S_NAr$ , Benzyne mechanism. Relative reactivity of alkyl, allyl/benzyl, vinyl and aryl halides towards nucleophilic substitution reactions.

### UNIT-II

#### ALCOHOLS

- A. Alcohols: Nomenclature, preparation, properties and relative reactivity of  $1^\circ$ ,  $2^\circ$ ,  $3^\circ$  alcohols, Bouvaelt-Blanc Reduction for the preparation of alcohols, Dihydric alcohols – methods of formation, chemical reactions of vicinal glycols, oxidative cleavage [ $Pb(OAc)_4$  and  $HIO_4$ ] and pinacol-pinacolone rearrangement.
- B. Trihydric alcohols - Nomenclature, methods of formation, chemical reactions of glycerol.

#### PHENOLS

- A. Structure and bonding in phenols, physical properties and acidic character, Comparative acidic strength of alcohols and phenols, acylation and carboxylation.
- B. Mechanism of Fries rearrangement, Claisen rearrangement, Gatterman synthesis, Hauben-Hoesh reaction, Lederer-Manasse reaction and Reimer-Tiemann reaction.

### UNIT-III

#### ALDEHYDES AND KETONES

- A. Nomenclature, structure and reactivity of carbonyl group. General methods of preparation of aldehydes and ketones.
- Mechanism of nucleophilic addition to carbonyl groups: Benzoin, Aldol, Perkin and Knoevenagel condensation. Condensation with ammonia and its derivatives, Wittig reaction, Mannich reaction, Beckmann and Benzil- Benzilic rearrangement.
- B. Use of acetate as protecting group, Oxidation of aldehydes, Baeyer-Villiger oxidation of ketones, Cannizzaro reaction, MPV, Clemmensen reduction, Wolf-Kishner reaction,  $LiAlH_4$  and  $NaBH_4$  reduction. Halogenation of enolizable ketones, An introduction to  $\alpha,\beta$ -unsaturated aldehydes and

ketones.

#### UNIT-IV

##### A. CARBOXYLIC ACIDS

Preparation, Structure and bonding, Physical and chemical properties including, acidity of carboxylic acids, effects of substituents on acid strength, Hell-Volhard Zeilinsky reaction. Reduction of carboxylic groups, Mechanism of decarboxylation.

Di carboxylic acids: Methods of formation and effect of heat and dehydrating agents, Hydroxyacids.

##### B. CARBOXYLIC ACID DERIVATIVES

Structure of acid chlorides, esters, amides and acid anhydrides, Relative stability of acyl derivatives. Physical properties, inter-conversion of acid derivatives by nucleophilic acyl substitution.

Mechanism of acid and base catalyzed esterification and hydrolysis.

#### UNIT-V

##### ORGANIC COMPOUNDS OF NITROGEN

A. Preparation of nitroalkanes and nitroarenes. Chemical reactions of nitroalkanes. Mechanism of nucleophilic substitution in nitroarenes and their reduction in acidic, neutral and alkaline medium.

B. Reactivity, structure and nomenclature of amines, physical properties. Stereochemistry of amines. Separation of mixture of primary, secondary and tertiary amines. Structural features affecting basicity of amines. Preparation of alkyl and aryl amines (reduction of nitro compounds and nitriles), reductive amination of aldehydic and ketonic compounds. Gabriel-Phthalimide reaction, Hofmann-Bromamide reaction, Reactions of amines, electrophilic aromatic substitution of aryl amines, Reaction of amines with nitrous acid. Synthetic transformations of aryl diazonium salts, Azo coupling.

#### REFERENCE BOOKS

1. Organic Chemistry, Morrison and Boyd, Prentice-Hall.
2. Organic Chemistry, L. G. Wade Jr. Prentice Hall.
3. Fundamentals of Organic Chemistry, Solomons, John Wiley.
4. Organic Chemistry, Vol I, II, III S. M. Mukherjee, S. P. Singh and R. P. Kapoor, Wiley Eastern (New Age).
5. Organic Chemistry, F. A. Carey, McGraw Hill.
6. Introduction to Organic Chemistry, Struweißer, Heathcock and Kosover, Macmillan.
7. Organic Chemistry, P. L. Soni.

8. Organic Chemistry, Bahl and Bahl.
9. Organic Chemistry, Joginder Singh.
10. Carbanic Rasayan, Bahl and Bahl.
11. Carbanic Rasayan, R. N. Singh, S. M. I. Gupta, M. M. Bakidia & S. K. Wadhwa.
12. Carbanic Rasayan, Joginder Singh.

**Paper – III**  
**PHYSICAL CHEMISTRY**

**60 Hrs., Max Marks 34**

**UNIT-I**

**A. THERMODYNAMICS-I**

Intensive and extensive variables; state and path functions; isolated, closed and open systems; Zeroth law of thermodynamics. First law: Concept of heat, work, internal energy and statement of first law; enthalpy, Relation between heat capacities, calculations of  $q$ ,  $w$ ,  $U$  and  $H$  for reversible, irreversible and free expansion of gases under isothermal and adiabatic conditions. Joule-Thompson expansion, inversion temperature of gases, expansion of ideal gases under isothermal and adiabatic condition

**B. THERMO CHEMISTRY**

Thermochemistry, Laws of Thermochemistry, Heats of reactions, standard states; enthalpy of formation of molecules and ions and enthalpy of combustion and its applications; calculation of bond energy, bond dissociation energy and resonance energy from thermochemical data, effect of temperature (Kirchhoff's equations) and pressure on enthalpy of reactions, Adiabatic flame temperature, explosion temperature.

**UNIT-II**

**A. THERMODYNAMICS-II**

Second Law of Thermodynamics: Spontaneous process, Second law, Statement of Carnot cycle and efficiency of heat engine, Carnot's theorem, thermodynamic state of temperature.

Concept of entropy: Entropy change in a reversible and irreversible process, entropy change in isothermal reversible expansion of an ideal gas, entropy change in isothermal mixing of ideal gases, physical signification of entropy, Molecular and statistical interpretation of entropy.

- B.** Gibbs and Helmholtz free energy, variation of  $G$  and  $A$  with pressure, volume, temperature, Gibbs-Helmholtz equation, Maxwell relations, Elementary idea of Third law of Thermodynamics, concept of residual entropy, calculation of absolute entropy of molecule.



### UNIT III

#### A CHEMICAL EQUILIBRIUM

Criteria of thermodynamic equilibrium, degree of advancement of reaction, chemical equilibria in ideal gases. Concept of Fugacity, Thermodynamic derivation of relation between Gibbs free energy of reaction and reaction quotient. Coupling of exergonic and endergonic reactions. Equilibrium constants and their quantitative dependence on temperature, pressure and concentration. Thermodynamic derivation of relations between the various equilibrium constants  $K_p$ ,  $K_c$  and  $K_x$ . Le Chatelier principle (quantitative treatment). Equilibrium between ideal gas and a pure condensed phase.

#### B IONIC EQUILIBRIA

Ionization of weak acids and bases, pH scale, common ion effect; dissociation constants of mono protic acids (exact treatment). Salt hydrolysis-calculation of hydrolysis constant, degree of hydrolysis and pH for different salts. Buffer solutions; derivation of Henderson equation and its applications. Solubility and solubility product of sparingly soluble salts – applications of solubility product principle.

### UNIT-IV

#### PHASE EQUILIBRIUM

A. Phase rule, Phase, component and degree of freedom, derivation of Gibbs phase rule, Clausius-Claperon equation and its applications to Solid-Liquid, Liquid-Vapor and solid-Vapor, limitation of phase rule, applications of phase rule to one component system: Water system and sulphur system.

Application of phase rule to two component system: Pb-Ag system, desilverization of lead, Zn-Mg system Ferric chloride-water system, congruent and incongruent, melting point and eutectic point.

Three component system: Solid solution liquid pairs.

B. Nernst distribution law, Henry's law, application, solvent extraction

### UNIT V

#### PHOTOCHEMISTRY

Characteristics of electromagnetic radiation, Interaction of radiation with matter, difference between thermal and photochemical processes, Lambert-Beer's law and its limitations, physical significance of absorption coefficients. Laws of photochemistry: Grothus-Drapper law, Stark-Einstein law, quantum yield, actinometry, examples of low and high quantum yields, Photochemical equilibrium and the differential rate of photochemical reactions, Quenching, Role of photochemical reaction in biochemical process.

Jablonski diagram depicting various process occurring in the excited state, qualitative description of fluorescence, phosphorescence, non-radiative processes (internal conversion, intersystem crossing), photosensitized reactions, energy transfer processes (simple examples), photostationary states, Chemiluminescence.

### REFERENCE BOOKS

1. Physical Chemistry, G. M. Barrow, International student edition, McGraw Hill.
2. University General Chemistry, C. N. R. Rao, Macmillan.
3. Physical Chemistry, R. A. Alberty, Wiley Eastern.
4. The elements of physical chemistry, Wiley Eastern.
5. Physical Chemistry through problems, S. K. Dogra & S. Dogra, Wiley Eastern.
6. Physical Chemistry, B. D. Khosla,.
7. Physical Chemistry, Puri & Sharma.
8. Bhautik Rasayan, Puri, Sharma and Pathania, Vishal Publishing Company.
9. Bhautik Rasayan, P. L. Soni.
10. Bhautik Rasayan, Bahl and Tuli.
11. Physical Chemistry, R. L. Kapoor, Vol I-IV .
12. Chemical kinetics, K. J. Laidler, Pearson Educations, New Delhi (2004).

### Paper –IV

### LABORATORY COURSE

#### INORGANIC CHEMISTRY

Qualitative semimicro analysis of mixtures containing 5 radicals. Emphasis should be given to the understanding of the chemistry of different reactions. The following radicals are suggested:

$\text{CO}_3^{2-}$ ,  $\text{NO}_2^-$ ,  $\text{S}^{2-}$ ,  $\text{SO}_3^{2-}$ ,  $\text{S}_2\text{O}_3^{2-}$ ,  $\text{CH}_3\text{COO}^-$ ,  $\text{F}^-$ ,  $\text{Cl}^-$ ,  $\text{Br}^-$ ,  $\text{I}^-$ ,  $\text{NO}_3^-$ ,  $\text{BO}_3^{3-}$ ,  $\text{C}_2\text{O}_4^{2-}$ ,  $\text{PO}_4^{3-}$ ,  $\text{NH}_4^+$ ,  $\text{K}^+$ ,  $\text{Pb}^{2+}$ ,  $\text{Cu}^{2+}$ ,  $\text{Cd}^{2+}$ ,  $\text{Bi}^{3+}$ ,  $\text{Sn}^{2+}$ ,  $\text{Sb}^{3+}$ ,  $\text{Fe}^{3+}$ ,  $\text{Al}^{3+}$ ,  $\text{Cr}^{3+}$ ,  $\text{Zn}^{2+}$ ,  $\text{Mn}^{2+}$ ,  $\text{Co}^{2+}$ ,  $\text{Ni}^{2+}$ ,  $\text{Ba}^{2+}$ ,  $\text{Sr}^{2+}$ ,  $\text{Ca}^{2+}$ ,  $\text{Mg}^{2+}$ .

Mixtures should preferably contain one interfering anion, or insoluble component ( $\text{BaSO}_4$ ,  $\text{SrSO}_4$ ,  $\text{PbSO}_4$ ,  $\text{CaF}_2$  or  $\text{Al}_2\text{O}_3$ ) or combination of anions e.g.  $\text{CO}_3^{2-}$  and  $\text{SO}_3^{2-}$ ,  $\text{NO}_2^-$  and  $\text{NO}_3^-$ ,  $\text{Cl}^-$ ,  $\text{Br}^-$ , and  $\text{I}^-$ .

#### Volumetric analysis

- (a) Determination of acetic acid in commercial vinegar using NaOH.
- (b) Determination of alkali content-antacid tablet using HCl.

- (c) Estimation of calcium content in chalk as calcium oxalate by permanganometry.
  - (d) Estimation of hardness of water by EDTA.
  - (e) Estimation of ferrous & ferric by dichromate method.
  - (f) Estimation of copper using thiosulphate.
- Principles involved in chromatographic separations. Paper chromatographic separation of following metal ions: i. Ni (II) and Co (II) ii. Fe (III) and Al (III)

### ORGANIC CHEMISTRY

- Detection of elements (X, N, S).
- Qualitative analysis of unknown organic compounds containing simple functional groups (alcohols, carboxylic acids, phenols, nitro, amine, amide, and carbonyl compounds, carbohydrates)
- Preparation of Organic Compounds:
  - (i) m-dinitrobenzene, (ii) Acetanilide, (iii) Bromo/Nitro-acetanilide, (iv) Oxidation of primary alcohols-Benzoic acid from benzylalcohol, (v) azo dye.

### PHYSICAL CHEMISTRY

#### Transition Temperature

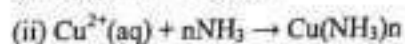
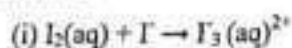
- Determination of the transition temperature of the given substance by thermometric/dilatometric method (e.g.  $\text{MnCl}_2 \cdot 4\text{H}_2\text{O}/\text{SrBr}_2 \cdot 2\text{H}_2\text{O}$ ).

#### Thermochemistry

- Determination of heat capacity of a calorimeter for different volumes using change of enthalpy data of a known system (method of back calculation of heat capacity of calorimeter from known enthalpy of solution or enthalpy of neutralization).
- Determination of heat capacity of the calorimeter and enthalpy of neutralization of hydrochloric acid with sodium hydroxide.
- To determine the solubility of benzoic acid at different temperature and to determine  $\Delta H$  of the dissolution process.
- To determine the enthalpy of neutralization of a weak acid/ weak base versus strong base/ strong acid and determine the enthalpy of ionization of the weak acid/ weak base.
- To determine the enthalpy of solution of solid calcium chloride and calculate the lattice energy of calcium chloride from its enthalpy data using Born Haber cycle.

### Phase Equilibrium

- To study the effect of a solute (e.g. NaCl, Succinic acid) on the critical solution temperature of two partially miscible liquids (e.g. phenol-water system) and to determine the concentration of that solute in the given phenol-water system.
- To construct the phase diagram of two component system (e.g. diphenylamine-benzophenone) by cooling curve method.
- Distribution of acetic/ benzoic acid between water and cyclohexane.
- Study the equilibrium of at least one of the following reactions by the distribution method:



### Molecular Weight Determination

Determination of molecular weight by Rast Camphor and Landsburger method.

*Note: Experiments may be added/ deleted subject to availability of time and facilities.*

### Reference Books

1. Mann, F.G. & Saunders, B.C. Practical Organic Chemistry, Pearson Education (2009)
2. Furniss, B.S., Hannaford, A.J., Smith, P.W.G. & Tatchell, A.R. Practical Organic Chemistry, 5th Ed. Pearson (2012)
3. Ahluwalia, V.K. & Aggarwal, R. Comprehensive Practical Organic Chemistry: Preparation and Quantitative Analysis, University Press (2000). 22
4. Ahluwalia, V.K. & Dhingra, S. Comprehensive Practical Organic Chemistry: Qualitative Analysis, University Press (2000).
5. Khosla, B. D.; Garg, V. C. & Gulati, A. Senior Practical Physical Chemistry, R. Chand & Co.: New Delhi (2011). Garland, C. W.; Nibler, J. W. & Shoemaker, D. P. Experiments in Physical Chemistry 8th Ed.; McGraw-Hill: New York (2003).
6. Halpern, A. M. & McBane, G. C. Experimental Physical Chemistry 3rd Ed.; W.H. Freeman & Co.: New York

**Zoology**  
**B.Sc. Part – II 2018-19**  
**Paper – I**  
**(Anatomy and Physiology)**

Comparative Anatomy of various organ systems of vertebrates:

**Unit: I**

- Integument and its derivatives: structure of scales, hair and feathers
- Alimentary canal and digestive glands in vertebrates
- Respiratory organs : Gills and lung , air-sac in birds

**Unit: II**

- Endoskeleton: (a) Axial Skeleton- Skull and Vertebrae, (b) Appendicular Skeleton  
Limbs and girdles
- Circulatory System: Evolution of heart and aortic arches
- Urinogenital System: Kidney and excretory ducts

**Unit: III**

- Nervous System: General plan of brain and spinal cord
- Ear and Eye: structure and function
- Gonads and genital ducts

**Unit: IV**

- Digestion and absorption of dietary components
- Physiology of heart, cardiac cycle and ECG
- Blood Coagulation
- Respiration: mechanism and control of breathing

**Unit: V**

- Excretion: Physiology of excretion, osmoregulation
- Physiology of muscle contraction
- Physiology of nerve impulse, Synaptic transmission

**Zoology**  
**B.Sc. Part – II 2018-19**

Paper-II  
**VERTEBRATE ENDOCRINOLOGY, REPRODUCTIVE BIOLOGY  
BEHAVIOUR, EVOLUTION AND APPLIED ZOOLOGY**

**Unit: I**

- Structure and function of Endocrine glands
- Hormone receptor
- Biosynthesis and secretion of thyroid, adrenal, ovarian and testicular hormones
- Endocrine disorder of pituitary, thyroid, adrenal and pancreas

**Unit:II**

- Reproductive cycle in vertebrates
- Menstruation, lactation and pregnancy
- Mechanism of parturition
- Hormonal regulation of gametogenesis

**Unit: III**

- Evidences of organic evolution.
- Theories of organic evolution.
- Variation, Mutation, Isolation and Natural selection.
- Evolution of Horse

**Unit:IV**

- Introduction to Ethology: Branches and concept of ethology.
- Patterns of Behaviour, Taxes, Reflexes, Drives and Stereotyped behaviour.
- Reproductive behavioural patterns.
- Drugs and behavior, Hormones and behaviour

**Unit:V**

- Prawn Culture
- Sericulture
- Apiculture
- Pisciculture
- Poultry keeping
- Elements of Pest Control: Chemical & Biological Control

**Zoology**  
**B.Sc. Part II 2018-19**  
**Practical**

The practical work in general shall be based on the syllabus prescribed and the students will be required to show the knowledge of the following:

- Study of the representative examples of the different chordates (Classified characters).
- Dissection of various systems of scoliodon-Afferent and Efferent branchial cranial nerves, internal ear.

**Alternative methods: By Clay/Thermacol/ Drawing/ Model etc.)**

- Simple microscopic technique through unstained or stained permanent mount.
- Study of prepared slides histological, as per theory papers.
- Study of limb girdles and vertebrae of Frog, Varanus, Fowl and Rabbit.
- Identification of species and individual of honey bee.
- Life cycle of honey bee and silkworm.
- Exercise based on Evolution and Animal behavior.

**Scheme of Practical Exam**

**Time: 3:30hrs**

• Major dissection (Cranial nerves/efferent branchial vessel)	10
• Exercise based on evolution	05
• Exercise based on applied zoology	05
• Exercise based on animal behavior	04
• Spotting-8 (slides-4,bones-2,specimen-2)	16
• Viva	05
• Sessional marks.	05

## **B.Sc.-II (BOTANY) PAPER-I**

### **(PLANT TAXONOMY, ECONOMIC BOTANY, PLANT ANATOMY AND EMBRYOLOGY)**

#### **UNIT-I**

Bentham and Hooker system of classification. Binomial Nomenclature, International Code of Nomenclature for Algae, Fungi, and plants (IUCN), Typification, numerical Taxonomy and chemotaxonomy. Preservation of Plant material and Herbarium techniques. Important botanical gardens and herbaria of India, Kew Botanical garden, England.

#### **UNIT-II**

Systematic position, distinguishing characters and economic importance of the following families, Ranunculaceae, Magnoliaceae, Brassicaceae, Rosaceae, Papaveraceae, Caryophyllaceae, Rutaceae, Cucurbitaceae, Apiaceae, Rubiaceae, Apocynaceae, Asclepiadaceae, Solanaceae, Malvaceae, Convolvulaceae, Orchidaceae, Acanthaceae, verbenaceae, Lamiaceae, Asteraceae, Fabaceae, Euphorbiaceae, Poaceae and Liliaceae.

#### **UNIT-III**

Economic Botany: Botanical name, family, part used and uses of the following economically important plants, fiber yielding plants; Cotton, jute, sun, hemp, coir. Timber yielding plants: Sal, Teak, Shisham and Pine. Medicinal plants: Kalmegh, Ashwagandha, Ghritkumari, Giloy, Brahmi, sarpgandha, --of medicinal plants of C.G. Food plants: Pearl millet, Buck of wheat, Sorghum, Soyabean, gram, Ground nut, Sugarcane and Potato. Fruit plants: Pear, Peach, Litchi. Spices: Cinnamon, Turmeric, Ginger, Asafoetida and Cumin. Beverages : Tea, Coffee Rubber Cultivation of important flowers: Chrysanthemum, Dahelia, Biodiesel plants Jatropa, Pongamia Ethnobotany in context of Chhattisgarh.

#### **UNIT-IV**

Plant Anatomy: Root and shoot apical meristems theories of root and shoot apex organization, permanent tissues, anatomy of root, stem and leaf of dicot and monocot, secondary growth in root and stem, Anatomical anomalies in the primary structure of stems (Nyctanthes, Boerhaavia, Casuarina), Anamolous secondary growth in Dracaena, Bignonia, Laptadenia.

#### **UNIT-V**

Embryology: Flower as a reproductive organ, anther, microsporogenesis, types of ovules, megasporogenesis, development of male and female gametophyte, pollination, mechanisms, self incompatibility, fertilization, endosperm, embryo, polyembryony, apomixes and parthenocarpy.

#### **Books Recommended:**



**B.Sc.-II (BOTANY) PAPER-II**  
**(ECOLOGY AND PLANT PHYSIOLOGY)**

**UNIT-I**

Introduction and scope of ecology, environmental and ecological factors, Soil formation and soil profile, Liebig's law of minimum, Shelford's law of tolerance, morphological and anatomical adaptations in hydrophytes, xerophytes and epiphytes.

**UNIT-II**

Population and community characteristics, Raunkiaer's life forms, population interactions (e.g. Symbiosis, Amensalism etc.), succession, ecotone and edge effect, ecological niches, ecotypes, keystone species

Concept of ecosystem, trophic levels, flow of energy in ecosystem, food chain and food web, concept of ecological pyramids

Biogeochemical cycles: carbon cycle, nitrogen cycle and phosphorus cycle

**UNIT-III**

Plant water relations: Diffusion, permeability, osmosis, imbibitions, plasmolysis, osmotic potential and water potential, Types of soil water, water holding capacity, wilting, Absorption of water, theories of Ascent of sap, Mineral nutrition and absorption, Deficiency symptoms, Transpiration, stomatal movement, significance of transpiration, Factors affecting transpiration, guttation.

**UNIT-IV**

Photosynthesis: Photosynthetic apparatus and pigments, light reaction mechanism of ATP synthesis, C<sub>3</sub>, C<sub>4</sub> CAM pathway of carbon reduction, photorespiration, factors affecting photosynthesis.

Respiration: Aerobic and anaerobic respiration, Glycolysis, Krebs's cycle, factors affecting respiration, R.Q.

**UNIT-V**

Plant growth hormones: Auxin, Gibberellin, Cytokinin, Ethylene and Abscisic acid. Physiology of flowering, Florigen concept, Photoperiodism and Vernalization. Seed dormancy and germination, plant movement.

**Books Recommended:**

Koromondy, E.J. *Concepts of Ecology*, Prentice Hall, USA

Singh, JS Singh SP and Gupta SR. *Ecology and Environmental Science and Conservation*, S. Chand Publishing, New Delhi

Sharma, PD. *Ecology and Environment*, Rastogi Publications, Meerut

Hopkins, WG and Huner, PA. *Introduction to Plant Physiology*, John Wiley and Sons.

Pandey SN and Sinha BK, *Plant Physiology*, Vikas Publishing, New Delhi

Taiz, L and Zeiger. E. *Plant Physiology*, 5<sup>th</sup> edition, Sinauer Associates Inc. M.A, USA

Srivastava, HS *Plant Physiology and Biotechnology*, Rastogi Publications, Meerut

### B.Sc. II (BOTANY)

#### Practical

1. Taxonomy: Detailed description and identification of locally available plants of the families as prescribed in the theory paper.
2. Economic Botany: Identification and comment on the plants and plant products belonging to different economic use categories
3. Preparation of Herbarium of local wild plants.
4. Quantitative vegetation analysis of a grassland ecosystem.
5. Anatomical characteristics of hydrophytes and xerophytes.
6. Demonstration of root pressure.
7. Demonstration of transpiration.
8. Demonstration of evolution of O<sub>2</sub> in photosynthesis, factors affecting of photosynthesis.
9. Comparison of R.Q. of different respiratory substrates.
10. Demonstration of fermentation.
11. Determination of BOD of a water body.
12. Demonstration of mitosis.

**SYLLABUS  
B.COM. PART-I**

**GROUPING OF SUBJECTS AND SCHEME OF EXAMINATION**

Subject		Max.	Min.
i) Environmental Studies	75	100	33
Field Work	25		
<b>A. Foundation Course</b>			
I. Hindi Language		75	26
II. English Language		75	26
<b>B. Three Compulsory Groups</b>			
<b>Group-I</b>			
I. Financial Accounting	75	150	50
II. Business Communication	75		
<b>Group-II</b>			
I. Business Mathematics	75	150	50
II. Business Reg. Framework	75		
<b>Group-III</b>			
I. Business Environment	75	150	50
II. Business Economics	75		

**B.Com Part-I  
Compulsory**

**Group – I Paper – I - Financial Accounting**

**OBJECTIVE** – To impart basic accounting knowledge as applicable to business.

Present Syllabus	Proposed Syllabus	Remark
<p><b>UNIT -I</b> Meaning and Scope of Accounting : Need, development and definition, objectives of accounting, difference between Book-keeping and accounting; Branches of accounting; Accounting Principles. Accounting Standard : International Accounting Standard only outlines, Accounting Standard in India. Accounting Transaction : Accounting Cycles Journal Rules of debit &amp; Credit. Compound Journal Entry opening Entry Relationship between Journal &amp; ledger, Capital &amp; Revenue: Classification of Income &amp; Expenditure entries.</p>	<p><b>UNIT -I</b> Accounting :An Introduction: Development, Definition, Needs, objectives; Branches of accounting; Basic Accounting Principles, Concepts &amp; Conventions. Accounting Standard : International Accounting Standard only outlines, Accounting Standard in India. Accounting Transaction : Concept of Double Entry System, Concept of Capital &amp; Revenue , Book of original records : Journal; Ledger; Sub-Division of Journal : Cashbook.</p>	<p>Addition of Sub Division of journal</p>
<p><b>UNIT -II</b> Final Accounts; Trial balance; Manufacturing account; Trading account; Profit &amp; loss account; Balance sheet; Adjustment entries. Rectification of errors; Classification of errors; Location of errors; Rectification of errors; Suspense account; Effect on profit.</p>	<p><b>UNIT -II</b> Final Accounts; Trial balance; Manufacturing account; Trading account; Profit &amp; loss account; Balance sheet; Adjustment entries. Rectification of errors; Classification of errors; Location of errors; Rectification of errors; Suspense account; Effect on profit.</p>	<p>No Change</p>
<p><b>UNIT -III</b> Depreciation, Provisions, and Reserves; Concept of depreciation; Causes of deprecation; Depreciation, depletion amortization, Depreciation accounting; Methods of recording depreciation; Methods for providing depreciation; Depreciation of different assets; Depreciation of Replacement cost; Depreciation policy, as per Indian accounting Standard : provisions and Reserves. Accounts of Non-Trading Institutions.</p>	<p><b>UNIT -III</b> Depreciation, Provisions, and Reserves; Concept of depreciation; Causes of deprecation; Depreciation, depletion amortization, Depreciation accounting; Methods of recording depreciation; Methods for providing depreciation; Depreciation of different assets; Depreciation of Replacement cost; Depreciation policy, as per Indian accounting Standard : provisions and Reserves. Accounts of Non-Trading Institutions.</p>	<p>No Change</p>

Present Syllabus	Proposed Syllabus	Remark
<p><b>UNIT -IV</b> Special Accounting Areas : Branch Account : Dependent Branch : Debtors system, stock and debtor system ; Hire-purchase and installment purchase system ; Meaning of hire-purchase contract, Legal provision regarding hire-purchase contract; Accounting for goods of substantial sale values, and accounting records for goods for small values ; Installment purchase system ; After sales Service.</p> <p><b>UNIT -V</b> a. Partnership Account : Essential characteristics of partnership: Partnership deed, Final accounts; Adjustment after closing the accounts ; Fixed fluctuating capital ; Goodwill ; AS- 10 ; Joint Life Policy ; Change in Profit Sharing Ratio. b. Reconstitution of a partnership firm-Admission of a partner ; Retirement of a partner ; Death of a partner; Dissolution of a firm ; Accounting entries; Insolvency of partnership firm-Modes of dissolution of a firm; Accounting entries ; Insolvency of partners distribution.</p>	<p><b>UNIT -IV</b> Special Accounting Areas : Hire-purchase and installment purchase system : Meaning of hire-purchase contract, Legal provision regarding hire-purchase contract; Accounting for goods of substantial sale values, and accounting records for goods for small values ; Installment purchase system ; After sales Service.</p> <p><b>UNIT -V</b> Partnership Account : Dissolution of a Partnership Firm, Amalgamation of Partnership Firms, Conversion of Partnership Firm into Joint Stock Company.</p>	<p>Omission of Branch Accounting</p> <p>Omission of Fundamental of Partnership, Admission, Retirement and Death of partner.</p> <p>Addition of Amalgamation of Partnership Firms, Conversion of Partnership Firm into Joint Stock Company.</p>

**B.Com Part-I  
Compulsory**

**Group – II Paper – I - Business Mathematics**

**OBJECTIVE –** To enable the students to have such minimum knowledge of mathematics as is applicable to business and economic situations.

Present Syllabus	Proposed Syllabus	Remark
<p><b>UNIT -I</b> Calculus (problems and theorems involving trigonometrical ratios are not to be done) Differentiation : Partial derivatives up to second order ; Homogeneity of functions and Euler's theorem. Maxima And Minima: Cases of one variable involving second or higher order derivatives; logarithm's</p> <p><b>UNIT -II</b> Matrices and Determinants : Definition of a matrix ; Type of a matrices ; Algebra of matrices ; Properties of determinants ; Calculation of values of determinants upto third order ; Adjoint of a matrix, elementary of row or column operations; Finding inverse of a matrix through adjoint and elementary row or column operations; Solution of a system of linear equations having unique solution and involving not more than three variables.</p> <p><b>UNIT -III</b> Linear Programming -Formulation of LLP : Graphical method of solution ; Problems relating to two variables including the case of mixed constraints ; Cases having no solution, multiple solutions ; unbounded solutions and redundant constraints. Transportation Problem , Ratio &amp; Proportion.</p> <p><b>UNIT -IV</b> Compound interest and Annuities : Certain different types of interest rates ; Concept of present value and amount of a sum ; Types of annuities ; Present value and amount of an annuity, including the case of continuous compounding ; Valuation of simple loans and debentures; Problems relating to sinking funds.</p> <p><b>UNIT -V</b> Average, Percentages, Commission Brokerage, Profit and loss.</p>	<p><b>UNIT -I</b> Simultaneous Equations- Meaning, Characteristics, Methods of Solving Equations in Two Variables- Graphical, Substitution, Elimination and Cross Multiplication. Linear Programming -Formulation of LLP ; Graphical method of solution ; Problems relating to two variables including the case of mixed constraints.</p> <p><b>UNIT -II</b> Matrices and Determinants : Definition of a matrix ; Type of a matrices ; Algebra of matrices ; Properties of determinants ; Calculation of values of determinants upto third order ; Logarithm's &amp; Antilogarithm's.</p> <p><b>UNIT -III</b> Simple Interest and Compound Interest . Annuities : Types of annuities ; Present value and amount of an annuity, including the case of continuous compounding ; Valuation of simple loans and debentures; Problems relating to sinking funds.</p> <p><b>UNIT -IV</b> Ratio &amp; Proportion. Average, Percentage.</p> <p><b>UNIT -V</b> Commission, Brokerage, Discount, Profit and loss.</p>	<p>Omission of Calculus Differentiation .</p> <p>Addition of Chapter Simultaneous Equation.</p> <p>Omission of Adjoint, elementary of row or column operations; inverse of a matrix.</p>

**B.Com Part- I  
Compulsory**

**Group – I Paper – II -BUSINESS COMMUNICATION**

**OBJECTIVE –** To develop effective business communication skills among the students.

Present Syllabus	Proposed Syllabus	Remark
<p><b>UNIT -I</b> Introducing Business Communication : Definitions, concept and Significance of communication, Basic forms of communicating ; Communication models and process principles of effective communication; Theories of communication; Audience analysis. Self Development and Communication ; Development of positive personal attitudes, SWOT analysis; Vote's model of interdependence ; Whole Communication.</p> <p><b>UNIT -II</b> Corporate Communication : Formal and Informal communication networks; Grapevine; Miscommunication (Barriers) ; improving communication Practices in business communication ; Group discussions ; Mock interviews, Seminars; Effective listening exercises, Individual and group presentations and report writing.</p> <p><b>UNIT -III</b> Writing skill : Planning business messages; Rewriting and editing; The first draft; Reconstructing the final draft; Business letters and memo formats; Appearance request letters; Good news and bad new letters; Persuasive letters; Sales letters; Collection letters; Office memorandum.</p> <p><b>UNIT -IV</b> Report Writing : Introduction to a proposal, Short report and formal report , report preparation. Oral Presentation : Principles of oral presentation, factor affecting presentation, sales presentation, training presentation, conducting surveys, speeches to motivate, presentation skill.</p>	<p><b>UNIT -I</b> Introducing Business Communication : Definitions, concept and Significance of communication, Basic forms of communicating ; Communication models and process; principles of effective communication; Theories of communication; Self-Development and Communication ; Development of positive personal attitudes, SWOT analysis;</p> <p><b>UNIT -II</b> Corporate Communication : Formal and Informal communication networks; Grapevine; Miscommunication (Barriers) ; improving communication. Practices in business communication ; Group discussions ; Seminars; Effective Listening : Principles of effective listening, Factor affective listening exercises; Oral, Written, and video session, Audience analysis and feedback.</p> <p><b>UNIT -III</b> Writing skill : Business letters – Definition, concepts ,structure, advantages disadvantage, need and kinds of business letter ,Essentials of effective business letter. Good news and bad new letters; Office memorandum. Writing Resume and Letter of Job Application.</p> <p><b>UNIT -IV</b> Report Writing : Introduction to a proposal, Short report and formal report , report preparation. Oral Presentation : Principles of oral presentation, factor affecting presentation, sales presentation, training presentation, conducting surveys, speeches to motivate, presentation skill.</p>	<p>Omission of Vote's model of interdependence.</p> <p>Balancing of Syllabus and omitted repetition.</p>

Present Syllabus	Proposed Syllabus	Remark
<p>UNIT -V</p> <p>Non-Verbal Aspects of Communicating. Body Language : Kinesics, Proxemics, Para Language.</p> <p>Effective listening : Principles of effective listening, Factor affective listening exercises; Oral, Written, and video session.</p> <p>Interviewing skills : Appearing in interviews; Conducting interviews; writing resume and letter of application .</p> <p>Modern Forms of Communicating : Fax; E-Mail; video conferencing; etc.</p> <p>International Communication ; Cultural sensitiveness and cultural context ; Writing and presenting in international situations; Inter cultural factors in interactions; Adapting to Global business.</p>	<p>UNIT -V</p> <p>Non-Verbal Aspects of Communicating. Body Language : Kinesics, Proxemics, Para Language.</p> <p>Interviewing skills : Appearing in interviews; Conducting interviews; mock interview.</p> <p>Modern Forms of Communicating : Fax; E-Mail; video conferencing; etc.</p> <p>International Communication for global business.</p>	



**B.Com Part-I  
Compulsory**

**Group – II Paper – II – BUSINESS REGULATORY FRAMEWORK**

**OBJECTIVE –** To provide a brief idea about the framework of Indian business laws.

Present Syllabus	Proposed Syllabus	Remark
<p><b>UNIT -I</b> Law of Contract (1872) : Nature of contract ; Classification ; Offer and acceptance; Capacity of parties to contract, free consent, Considerations, Legality of object; Agreement declared void; Performance of contract; Discharge of contract; Remedies for breach of contract.</p> <p><b>UNIT -II</b> Special contracts; Indemnity ; Guarantee; Bailment and pledge; Agency.</p> <p><b>UNIT -III</b> Sale of Goods Act (1930) ;Formation of contracts of sale ;Goods and their classification, price, Conditions and warranties; Transfer of property in goods; Performance of the contract of sales; Unpaid seller and his rights; sale by auction; Hire purchase agreement.</p> <p><b>UNIT -IV</b> Negotiable Instrument Act (1881) ; Definition of negotiable instrument; Feature; Promissory note; Bill of exchange &amp; cheque; Holder and holder in the due course; Crossing of a cheque, types of crossing; Negotiation; Dishonor and discharge of negotiable instrument.</p> <p><b>UNIT -V</b> The Consumer Protection Act 1986 : Salient features; Definition of consumer ; Grievance redressal machinery; Foreign Exchange Management Act 2000 : Definition and main provisions, Right to Information Act 2005(Main Provision)</p>	<p><b>UNIT -I</b> Law of Contract (1872) -I : Nature of contract ; Classification ; Offer and acceptance; Capacity of parties to contract, free consent, Considerations, Legality of object; Agreement declared void.</p> <p><b>UNIT -II</b> Law of Contract (1872) - II : Performance of contract, Discharge of contract; Remedies for breach of contract. Special contracts; Indemnity ; Guarantee; Bailment and pledge; Agency.</p> <p><b>UNIT -III</b> Sale of Goods Act (1930) ;Formation of contracts of sale ;Goods and their classification, price, Conditions and warranties; Transfer of property in goods; Performance of the contract of sales; Unpaid seller and his rights; sale by auction; Hire purchase agreement.</p> <p><b>UNIT -IV</b> Negotiable Instrument Act (1881) ; Definition of negotiable instrument; Feature; Promissory note; Bill of exchange &amp; cheque; Holder and holder in the due course; Crossing of a cheque, types of crossing; Negotiation; Dishonor and discharge of negotiable instrument.</p> <p><b>UNIT -V</b> The Consumer Protection Act 1986 : Main Provision, Definition of consumer ,Consumer Disputes , Grievance redressal machinery ; Indian Partnership Act 1932. Limited Liabilities Partnership Act 2008. Introduction of Intellectual Property Right Act – Copyright, Patent &amp; Trademark.</p>	<p align="center">Balancing of Syllabus</p> <p>Replaced FEMA &amp; RTI with Partnership act, LLP Act 2008 and Intellectual property right act.</p>

## B.Com Part-I

### Compulsory

#### Group – III Paper – I– BUSINESS ENVIRONMENT

**OBJECTIVE** – To acquainting the students with the emerging issues in business at the national and international level in the light of the policies of liberalization and globalization.

Present Syllabus	Proposed Syllabus	Remark
<b>UNIT -I</b> Indian Business Environment : Concept, components and importance Economic Trends (overview) : Income ; Saving and investment ; industry; Trade and balance of payment, Money ; Finance ; Prices.	<b>UNIT -I</b> Business Environment : Concept, Components and Importance .Economic Trends (overview) : Income ; Saving and investment ; Trade and balance of payment, Money and Finance .	
<b>UNIT -II</b> Problems of Growth : Unemployment ; Poverty ; Regional imbalances ; social injustice, Inflation ; Parallel economy ; Industrial sickness.	<b>UNIT -II</b> Problems of Growth : Unemployment ; Poverty ; Regional imbalances ; Social Injustice, Inflation ; Parallel economy ; Industrial sickness.	
<b>UNIT -III</b> Role of Government ; Monetary and fiscal policy ; Industrial policy ; Industrial licensing, Privatization ; Devaluation; Export-Import policy; Regulation of foreign investment; Collaborations in the light of recent changes.	<b>UNIT -III</b> Role of Government ; Monetary and fiscal policy ; Industrial policy ; Industrial licensing, Privatization ; Liberalisation, Globalisation Devaluation; Demeritisation; Export-Import policy.	Addition of Liberalization, Globalization and Demeritisation.
<b>UNIT -IV</b> Review of Previous Plans, the current five year Plan, major policy, Resources Allocation.	<b>UNIT -IV</b> Economic Planning in India : Need, objectives, Strategy; Review of Previous Plans, Planning Commission. Foreign Exchange Management Act 2000 : Basic Concept and Main Provisions.	Addition of Planning Commission and omitted current five year plan.
<b>UNIT -V</b> International Environment ; international trading environment (overview); Trends in World trade and the problems of developing countries; Foreign trade and economic growth; International economic groupings ; International economic institutions – GATT, WTO World Bank, IMF, FDI, Counter trade.	<b>UNIT -V</b> International Environment ; Trends in World trade and the problems of developing countries; Foreign trade and economic growth; International economic groupings – GATT, WTO, UNCTAD, World Bank, IMF, FDI.	Addition of UNCTAD and omitted international trading environment.

**B.Com Part-I  
Compulsory**

**Group – III – Business Economics      Paper – II– BUSINESS ECONOMICS**

**OBJECTIVE –** To acquaint the students with the principles of Business Economics as are applicable in business.

Present Syllabus	Proposed Syllabus	Remark
<p><b>UNIT –I</b> Introduction : Basic problems of an economy ; Working of price mechanism. Elasticity of Demand ; Concept and measurement of elasticity of demand ; Price, income and cross elasticity ; Average revenue , marginal revenue, and elasticity of demand; Determinates of elasticity of demand; Importance of elasticity of demand.</p> <p><b>UNIT –II</b> Production Function ; Law of variable proportions ; Iso-quants; Expansion path; Returns to scale; Internal and external economies and diseconomies.</p> <p><b>UNIT –III</b> Theory of Costs : Short-run and long-run cost curves – traditional and modern approaches. Market Structures   Market structures and business decisions ; Objectives of a business firm. (a) Perfect Competition ; Profit maximization and equilibrium of firm and industry; Short-run and long-run supply curves; Price and output determination, Practical applications. (b) Monopoly ; Determination of price under monopoly ; Equilibrium of a firm ; Comparison between perfect competition and monopoly; Multi-plant monopoly ; Price Discrimination. Practical applications.</p>	<p><b>UNIT –I</b> Introduction : Definition ,Nature and Scope of Economics, Difference Between Micro and Macro Economics, Method of Economic Study : Inductive and Deductive Methods. Basic problem of Economy, Working of Price Mechanism. Utility Analysis: Measurements of Utility, Law of Diminishing Marginal Utility, Law of Equal-Marginal Utility.</p> <p><b>UNIT –II</b> Law of demand: Meaning and Definitions, Effecting Factors, Types ; Exception of Law of demand. Elasticity of Demand : Concept, Definitions, Importance, Types and Measurement of Elasticity of Demand, Factors affecting the Elasticity of Demand.</p> <p><b>UNIT –III</b> Production : Factors of Production ,their characteristics and importance. Production Functions : Law of Variable Proportions, Return to scale and Equal Product Curve Analysis. Internal and external economies and diseconomies.</p>	<p>Addition of Introduction of Economics, Method of Economic study &amp; Utility Analysis.</p> <p>Addition of Law of Demand.</p> <p>Addition of Factor of Production.</p>

Present Syllabus	Proposed Syllabus	Remark
<p><b>UNIT -IV</b> Market Structure</p> <p>(a) Monopolistic competition : Meaning and Characteristics; Price and output determination under monopolistic competition ; Product differentiations; Selling costs; Comparison with perfect competition; Excess capacity under monopolistic competition.</p> <p>(b) Oligopoly : Characteristics, indeterminate pricing and output Classical models of oligopoly ; Price leadership ; Collusive oligopoly.</p> <p><b>UNIT -V</b> Factor Pricing-I : Marginal Productivity theory and demand for factors; Nature of supply of factor inputs; Determination of wage rates under perfect competition and monopoly; Exploitation of labour. Factor pricing-II : Rent concept, Ricardian and modern theories of Rent quasirent. Interests concept and theories of interest ; Profit-nature , concept and theories of profit.</p>	<p><b>UNIT -IV</b> Market Structure - Concept , Characteristics, Classification. Determination of Price under condition of Perfect Competition, Imperfect Competition and Monopoly, Monopolistic Competition, Oligopoly and Duopoly.</p> <p><b>UNIT -V</b> Theories of distribution, Marginal Productivity theory of distribution, Concept and theories of Wages, Rent, Interest &amp; Profit.</p>	

**SYLLABUS  
B.COM. PART-II**

**GROUPING OF SUBJECTS AND SCHEME OF EXAMINATION**

Subject		Max.	Min.
<b>A. Foundation Course</b>			
I. Hindi Language		75	26
II. English Language		75	26
<b>B. Three Compulsory Groups</b>			
<b>Group-I</b>			
I. Corporate Accounting	75	150	50
II. Company Law	75		
<b>Group-II</b>			
I. Cost Accounting	75	150	50
II. Principles of Bus. Management	75		
<b>Group-III</b>			
I. Business Statistics	75	150	50
II. Fundamental of Entrepreneurship	75		

## B.Com.II year

### COMPULSORY

#### Group - I PAPER - I (CORPORATE ACCOUNTING)

#### OBJECTIVE

This course enable the students to develop awareness about corporate accounting in conformity with the provisions of companies Act.  
(As per company act 2013)

Current Syllabus	Proposed Syllabus	Remark
<b>UNIT-I</b> Issue, Forfeiture, and Re-issue of Shares : Redemption of preference shares; Issue and redemption of debentures.	<b>UNIT-I</b> Issue, Forfeiture, and Re-issue of Shares : Redemption of preference shares; Issue and redemption of debentures.	
<b>UNIT-II</b> Final Accounts; Excluding computation of managerial remuneration, and disposal of profit, Liquidation of Company.	<b>UNIT-II</b> Final Accounts (as per company act 2013) Liquidation of Company.	Omission of managerial remuneration, and disposal of profit
<b>UNIT-III</b> Valuation of Goodwill and Shares.	<b>UNIT-III</b> Valuation of Goodwill and Shares.	
<b>UNIT-IV</b> Accounting for Amalgamation of Companies as per Indian Accounting Standard 14; Accounting for internal reconstruction - excluding intercompany holdings and re-construction schemes.	<b>UNIT-IV</b> Accounting for Amalgamation of Companies as per Indian Accounting Standard 14; Accounting for internal reconstruction - excluding intercompany holdings and re-construction schemes.	
<b>UNIT-V</b> Consolidated Balance Sheet of holding companies with one subsidiary only. <u>Final Account of Banking Companies.</u>	<b>UNIT-V</b> Consolidated Balance Sheet of holding companies with one subsidiary only.	Omission Final Account of Banking Companies.

#### SUGGESTED READINGS :

1. Dr. S.M. Shukla, Sahitya Bhawan Agra.
2. Dr. Manoj Mehta & Agrawal Published - Indore.
3. Dr. Karim Khanuja - Published - Agra.
4. Gupta R.L., Radhaswamy N; Company Accounts; Sultan Chand & Sons, New Delhi.

**Group - II PAPER - I (COST ACCOUNT)**

**OBJECTIVE**

This course exposes the students to the basic concepts and the tools used in cost accounting.

Current Syllabus	Proposed Syllabus	Remark
<b>UNIT-I</b> Introduction : Nature and scope of cost accounting ; Cost concepts and classification; Methods and techniques; Installation of costing systems; Concept of cost audit. Accounting for Material ; Material Control; Concept and techniques; Pricing of material losses; Treatment of material losses.	<b>UNIT-I</b> Introduction : Nature and scope of cost accounting ; Cost concepts and classification; Methods and techniques; Installation of costing systems; Concept of cost audit. Accounting for Material ; Material Control; Concept and techniques; Pricing of material losses; Treatment of material losses.	
<b>UNIT-II</b> Accounting for Labour : Labour cost control procedure; Labour turnover; Idle time and overtime; Methods of wage payment - time and piece rates; Incentive schemes. Accounting for overheads; Classification and departmentalization; Absorption of overheads; Determination of overhead rates; Under and over absorption, and its treatment.	<b>UNIT-II</b> Accounting for Labour : Labour cost control procedure; Labour turnover; Idle time and overtime; Methods of wage payment - time and piece rates; Incentive schemes; Accounting for overheads; Classification and departmentalization; Absorption of overheads; Determination of overhead rates; Under and over absorption, and its treatment.	
<b>UNIT-III</b> Cost Ascertainment : Unit costing; Job, batch and contract costing.	<b>UNIT-III</b> Cost Ascertainment : Unit costing; Job, batch and contract costing.	
<b>UNIT-IV</b> Operating costing; Process Costing - excluding inter - process profits, and joint and by - products.	<b>UNIT-IV</b> Operating costing; Process Costing - excluding inter - process profits, and joint and by - products.	
<b>UNIT-V</b> Cost Records : Intergal and non - integral systems; Reconciliation of cost and financial accounts; Break Even Point.	<b>UNIT-V</b> Cost Records : Intergal and non - integral systems; Reconciliation of cost and financial accounts; Break Even Point.	

**SUGGESTED READINGS :**

1. M.L. Agrawal : Sabitya Bhawan Agra.
2. Maheshwari S.N. : Advanced Problems and Solutions in Cost Accounting; Sultan Chand, New Delhi.
3. Arora M.M. : Cost Accounting - Principles and Practice; Vikas, New Delhi.
4. Jain S.P. and Narang K.L. : Cost Accounting; Malyani New Delhi.

**Group - II - PAPER - II  
PRINCIPLES OF BUSINESS MANAGEMENT**

**OBJECTIVE**

This Course familiarises the students with the basics of principles of management.

Current Syllabus		Proposed Syllabus		Remark
<b>UNIT-I</b>	Introduction : Concept, nature, process, and significance of management; management roles (Mintzberg); An overview of functional areas of management; Development management thought; Classical and neo-classical systems; Concept approaches.	<b>UNIT-I</b>	Introduction : Concept, nature, process, and significance of management; management roles (Mintzberg); An overview of functional areas of management; Development management thought; Classical and neo-classical systems; Concept approaches.	
<b>UNIT-II</b>	Planning : Concept, process and types. Decision making - concept and bounded rationality; Management by objectives; Corporate planning; Environment analysis and diagnosis; Strategy formulation.	<b>UNIT-II</b>	Planning : Concept, process and types. Decision making - concept and bounded rationality; Management by objectives; Corporate planning; Environment analysis and diagnosis; Strategy formulation.	
<b>UNIT-III</b>	Organizing : Concept, nature, process and significance; Authority and resident relationships; Centralization and decentralization; Departmentation; Organization structure - forms and contingency factors.	<b>UNIT-III</b>	Organizing : Concept, nature, process and significance; Authority and resident relationships; Centralization and decentralization; Departmentation; Organization structure - forms and contingency factors.	
<b>UNIT-IV</b>	Motivating and Leading People at work : Motivation - concept; Theories Herzberg, McGregor, and Ouchi; Financial and non-financial incentives. Leadership - concept and leadership styles; Leadership theories (Tannenb Schmidt.); Likert's System Management; Communication - nature, process, networks, and barriers. Effective Communication.	<b>UNIT-IV</b>	Motivating and Leading People at work : Motivation - concept; Theories Herzberg, McGregor, and Ouchi; Financial and non-financial incentives. Leadership - concept and leadership styles; Leadership theories (Tannenb Schmidt.); Likert's System Management; Communication - nature, process, networks, and barriers. Effective Communication.	
<b>UNIT-V</b>	Managerial Control : Concept and process; Effective control systems; Technical control - traditional and modern. Management of Change : Concept, nature, and process of planned Resistance to change; Emerging horizons of management in a environment.	<b>UNIT-V</b>	Managerial Control : Concept and process; Effective control systems; Technical control - traditional and modern. Management of Change : Concept, nature, and process of planned Resistance to change; Emerging horizons of management in a environment.	

**SUGGESTED READINGS :**

1. Dr. R.C. Agrawal, Agra.
2. Dr. S.C. Saxena, Agra.
3. Wehrich and Koontz, et al : Essentials of Management; Tata McGraw Hill, New Delhi.



**Group - I - PAPER - II  
COMPANY LAW**

**OBJECTIVE**

This objective of this course is to provide basic knowledge of the provisions Companies Act, 2013, along with relevant case law.

Current Syllabus	Proposed Syllabus	Remarks
<b>UNIT-I</b> Corporate personalities: kinds of Companies, Nature & Scope, promotion on and incorporation of companies.	<b>UNIT-I</b> Corporate personalities; kinds of Companies, Nature & Scope, promotion on and incorporation of companies.	
<b>UNIT-II</b> Memorandum of Association; Articles of Association; Prospectus, Shares; share capital - transfer and transmission.	<b>UNIT-II</b> Memorandum of Association; Articles of Association; Prospectus. Shares; share capital - transfer and transmission.	
<b>UNIT-III</b> Capital management - borrowing powers, mortgages and charges, debentures. Directors - Managing Director, whole time director, Appointment, Remuneration, and duties.	<b>UNIT-III</b> Capital management - borrowing powers, mortgages and charges, debentures. Directors - Managing Director, whole time director, Appointment, Remuneration, and duties.	
<b>UNIT-IV</b> Company meetings - kinds, Notice, quorum, voting, proxy, resolutions, minutes.	<b>UNIT-IV</b> Company meetings - kinds, Notice, quorum, voting, proxy, resolutions, minutes.	
<b>UNIT-V</b> majority powers and minority rights; Prevention of oppression and mismanagement. Winding up - kinds and conduct.	<b>UNIT-V</b> majority powers and minority rights; Prevention of oppression and mismanagement. Winding up - kinds and conduct.	

**SUGGESTED READINGS :**

1. Singh Avtar : Company Law; Eastern Book Co., Lucknow.
2. Dr. S.M. Shukla, Shahitya Bhawan Agre.
3. Dr. K.C. Agrawal, Shahitya Bhawan Agre.
4. Kapoor N.D. : Company Law - Incorporating the Provisions of the Companies Amendment Act, 2013 Chand & Sons, New Delhi.

Group - III - PAPER - I

BUSINESS STATISTICS

OBJECTIVE

It enable the students to gain understanding of statistical techniques as are applicable to business.

Current Syllabus	Proposed Syllabus	Remark
<p><b>UNIT-I</b> Introduction : Statistics as a subject; Descriptive Statistics - compared to Inferential Statistics; Types of data; Summation operation; Rules of Sigma E operations; Analysis of University Data; Construction of a frequency distribution; Concept of central tendency.</p>	<p><b>UNIT-I</b> Introduction : Statistics as a subject; Descriptive Statistics - compared to Inferential Statistics; Types of data; Summation operation; Rules of Sigma E operations; Analysis of University Data; Construction of a frequency distribution; Concept of central tendency.</p>	
<p><b>UNIT-II</b> Dispersion - and their measures; Partition values; Moments; Skewness and Measures; Kurtosis and Measures.</p>	<p><b>UNIT-II</b> Dispersion - and their measures; Partition values; Skewness and measures;</p>	<p>Revision of moments &amp; Kurtosis</p>
<p><b>UNIT-III</b> Analysis of Bivariate Data : Linear regression two variables and correlation.</p>	<p><b>UNIT-III</b> Analysis of Bivariate Data : Linear regression two variables and correlation.</p>	
<p><b>UNIT-IV</b> Index Numbers: Meaning, Types, and uses; Methods of Constructing price and quantity indices (simple and aggregate); Tests of adequacy; Chain - base index numbers; Base shifting, splicing and deflating; Problems in constructing index numbers; Consumer price index. Analysis of Time Series : Cause of Variation in time series data; Components of a time series; Decomposition - Additive and Multiplicative models; Determination of trend - Moving Average method and method of least squares (including linear, second degree, parabolic, and exponential trends); Computation of seasonal indices by simple average, ratio - to - trend, ratio - to - moving average, and link relative methods.</p>	<p><b>UNIT-IV</b> Index Numbers: Meaning, Types, and uses; Methods of Constructing price and quantity indices (simple and aggregate); Tests of adequacy; Chain - base index numbers; Base shifting, splicing and deflating; Problems in constructing index numbers; Consumer price index. Analysis of Time Series : Cause of Variation in time series data; Components of a time series; Decomposition - Additive and Multiplicative models; Determination of trend - Moving Average method and method of least squares (including linear, second degree, parabolic, and exponential trends); Computation of seasonal indices by simple average, ratio - to - trend, ratio - to - moving average, and link relative methods.</p>	
<p><b>UNIT-V</b> Forecasting and Methods : Forecasting - concept, types and importance; General approach to forecasting; Methods of forecasting; Demand; Industry Vs Company sales forecast; Factors affecting company sales. Theory of Probability : as a concept; The three approaches to defining probability; Addition and multiplication laws of probability; Conditional Probability; Bayes' Theorem; Expectation and Variance of a random variable.</p>	<p><b>UNIT-V</b> Forecasting and Methods : Forecasting - concept, types and importance; General approach to forecasting; Methods of forecasting; Demand; Industry Vs Company sales forecast; Factors affecting company sales. Theory of Probability : as a concept; The three approaches to defining probability; Addition and multiplication laws of probability; Conditional Probability; Bayes' Theorem; Expectation and Variance of a random variable.</p>	

SUGGESTED READINGS :

1. S.M.Shukla, Shaktiya Sharan, Agara.
2. Statistical Analysis, Dr. Rajesh Shukla and J.B. Agrawal

**Group - III PAPER - II**  
**FUNDAMENTALS OF ENTREPRENEURSHIP**

**OBJECTIVE**

It Provides exposure to the students to the entrepreneurial culture and industrial growth so as to preparing them to set up and manage their own small units.

Current Syllabus	Proposed Syllabus	Remark
<b>UNIT-I</b> Introduction : The entrepreneur; Definition; Emergence of entrepreneurial class; Theories of entrepreneurship; Role of socio - economic environment; Characteristics.	<b>UNIT-I</b> Introduction : The entrepreneur; Definition; Emergence of entrepreneurial class; Theories of entrepreneurship; Role of socio - economic environment; Characteristics.	
<b>UNIT-II</b> Promotion of a Venture; Opportunities analysis; External environmental analysis economic, social and technological; Competitive factors; Legal requirements for establishment of a new unit, and raising of funds; Venture capital sources and documentation required.	<b>UNIT-II</b> Promotion of a Venture; Opportunities analysis; External environmental analysis economic, social and technological; Competitive factors; Legal requirements for establishment of a new unit, and raising of funds; Venture capital sources and documentation required.	
<b>UNIT-III</b> Entrepreneurial Behavior : Innovation and entrepreneurship; Entrepreneurial behavior and Psycho - Theories, Social responsibility.	<b>UNIT-III</b> Entrepreneurial Behavior : Innovation and entrepreneurship; Entrepreneurial behavior and Psycho - Theories, Social responsibility.	
<b>UNIT-IV</b> Entrepreneurial Development Programs (EDP) : EDP, their role, relevance, and achievements; Role of Government in organizing EDPs; Critical evaluation.	<b>UNIT-IV</b> Entrepreneurial Development Programs (EDP) : EDP, their role, relevance, and achievements; Role of Government in organizing EDPs; Critical evaluation.	
<b>UNIT-V</b> Role of Entrepreneur : Role of an entrepreneur in economic growth as an innovator, generation of employment opportunities, complementing and supplementing economic growth, bringing about social stability and balanced regional development of industries; Role in export promotion and import substitution, foreign earnings, and augmenting and meeting local demand.	<b>UNIT-V</b> Role of Entrepreneur : Role of an entrepreneur in economic growth as an innovator, generation of employment opportunities, complementing and supplementing economic growth, bringing about social stability and balanced regional development of industries; Role in export promotion and import substitution, foreign earnings, and augmenting and meeting local demand.	

**SUGGESTED READINGS :**

1. Srivastava S.B. : A Practical Guide to industrial Entrepreneurs; Sultan Chand and Sons, New Delhi.
2. Tandon B.C. : Environment and Entrepreneur; Cough Publications, Allahabad.
3. Prasanna Chandra : Project Preparation, Appraisal, Implementation; Tata McGraw Hill, New Delhi.

**SYLLABUS  
B.COM. PART-III**

**GROUPING OF SUBJECTS AND SCHEME OF  
EXAMINATION**

Subject		Max.	Min.
<b>Foundation Course</b>			
I. Hindi Language		75	26
II. English Language		75	26
<b>Compulsory Groups</b>			
<b>Group-I</b>			
I. Income Tax	75	150	50
II. Auditing	75		
<b>Group-II</b>			
I. Indirect Taxes	75	150	50
II. Management Accounting	75		
<b>Group-III Optional</b>			
<b>Option Group A (Finance Area)</b>			
I. Financial Management	75	150	50
II. Financial Market Operations	75		
<b>Option Group B (Marketing Area)</b>			
I. Principles of Marketing	75	150	50
II. International Marketing	75		
<b>Option Group C (Commercial Area)</b>			
I. Information Technology and its Applications in Business	75	150	50
II. Essential of e-Commerce	75		
<b>Option Group D (Money Banking &amp; Insurance Area)</b>			
I. Fundamental of Insurance	75	150	50
II. Money & Banking System	75		

**B.COM PART III**

**COMPULSORY CORE COURSE**

**TITLE OF PAPER - Group-I - PAPER – I - INCOME TAX**

**OBJECTIVE**

It enables the students to know the basics of Income Tax Act and its implications.

M.M. 75

Present syllabus	Proposed syllabus	Remark
UNIT-I Basic Concepts ; Income, agricultural Income, casual income, assessment year, previous year, gross total income, total income, person. Basis of charge : Scope of total income, residence and tax liability, income which does not form part of total income.	UNIT-I Basic Concepts : Income, agricultural Income, casual income, assessment year, previous year, gross total income, total income, person. Basis of charge : Scope of total income, residence and tax liability, income which does not form part of total income.	No change
UNIT-II Heads of Income : Salaries; Income from house property.	UNIT-II Heads of Income : Salaries; Income from house property.	No change
UNIT-III Profit and gains of business or profession, including provisions relating to specific business; Capital gains, Income from other sources.	UNIT-III Profit and gains of business or profession, including provisions relating to specific business; Capital gains, Income from other sources.	No change
UNIT-IV Computation of Tax Liability : Set-off and carry forward of losses; Deduction from gross total income. Aggregation of income; Computation of total income and tax liability of and individual, H.U.F., and firm.	UNIT-IV Computation of Tax Liability : Set-off and carry forward of losses; Deduction from gross total income. Aggregation of income; Computation of total income and tax liability of individual and & HUF,	Omitted firm.
UNIT-V Tax Management : Tax deduction at source; Advance payment of tax; Assessment procedures; Tax planning for individuals. Tax evasion, Tax Avoidance and Tax planning. Tax	UNIT-V Tax Management : Tax deduction at source; Advance payment of tax; Assessment procedures; Tax planning for individuals. Tax evasion, Tax Avoidance and Tax planning. Tax	Addition of practical work relating important

Administration : Authorities, appeals, penalties.	Administration : Authorities, appeals, penalties. Preparation of return of income -Manually and on line	forms.
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**Suggested Reading :**

1. Singhania V.K. : Students Guide to Income Tax; Taxmann, Delhi.
2. Prasad, Bhagwati : Income Tax Law & Practice; Wily Publication, New Delhi.
3. Mehrotra H.C. : Income Tax Law & Accounts : Sahitya Bhawan, Agra.
4. Girish Ahuja and Ravi Gupta : Systematic approach to income tax : Sahitya Bhawan Publications, New Delhi.
5. Chandra Mahesh and Shukla D.C. : Income Tax Law and Practice; Pragati Publications, New Delhi.
6. R.K. Jain : Income Tax & Law (Hindi & English) Sahitya Bhawan, Publication, Agra

B.COM PART III

COMPULSORY CORE COURSE

PAPER – II

Group-13 - PAPER – I - INDIRECT TAXES WITH GST

OBJECTIVE

This course aims at imparting basic knowledge about GST and apply the provisions of GST law to various situations.

M.M. 75

Present syllabus	Proposed syllabus	Remark
UNIT-I Central Excise : Nature and scope of Central Excise; Important terms and definitions under the Central Excise Act; General procedures of central excise; Clearance and excisable goods; Concession to small scale industry under Central Excise Act.	UNIT-I. Customs : Role of customs in international trade; Important terms and definitions goods; Duty; Exporter; Foreign going vessel; Aircraft goods; Import; Import Manifest; Importer; Prohibited goods; Shipping bill; Store; Bill of lading; Export manifest; Letter of credit; Kinds of duties - basic, auxiliary, additional or countervailing; Basics of levy ad valorem, specific duties; Prohibition of export and import of goods, and provisions regarding notified & specified goods; Import of goods - Free import and restricted import; Type of import - import of cargo, import of personal baggage, import of stores. Clearance Procedure - For home consumption, for warehousing for re-export; Clearance procedure for import by post; Prohibited exports; Canalised exports; Export against licensing; Type of exports export of cargo, export of baggage; Export of cargo by land, sea, and air routes.	Due to – Constitutional amendment (change in tax structure)
UNIT-II State Excise, CENVAT. Detail study of State Excise during calculation of Tax.	UNIT-II State Excise, CENVAT. Detail study of State Excise during calculation of Tax.	
UNIT-III Customs : Role of customs in international	UNIT-III INTRODUCTION TO GOODS AND	

<p>trade; Important terms and definitions goods; Duty; Exporter; Foreign going vessel; Aircraft goods; Import; Import Manifest; Importer; Prohibited goods; Shipping bill; Store; Bill of lading; Export manifest; Letter of credit; Kinds of duties - basic, auxiliary, additional or countervailing; Basics of levy ad valorem, specific duties; Prohibition of export and import of goods, and provisions regarding notified &amp; specified goods; Import of goods - Free import and restricted import; Type of import - import of cargo, import of personal baggage, import of stores. Clearance Procedure - For home consumption, for warehousing for re-export; Clearance procedure for import by post; Prohibited exports; Canalised exports; Export against licensing; Type of exports export of cargo, export of baggage; Export of cargo by land, sea, and air routes.</p>	<p>SERVICES TAX (GST) - Objectives and basic scheme of GST, Meaning - Salient features of GST - Subsuming of taxes - Benefits of implementing GST, Structure of GST (Dual Model) - Central GST - State / Union Territory GST - Integrated GST GST Council: Structures Power and Functions. Provisions for amendments.</p>	
<p>UNIT-IV Central Sales Tax : Important terms and definitions under the Central Sales Tax Act 1956 - Dealer, declared good, place of business, sale, sale price, turnover, year, appropriate authority ; Nature and scope of Central Sales Tax Act; Provisions relating to inter-state sales; Sales in side a state; Sales/purchase in the course of imports and exports out of India. Registration of dealers and procedure thereof; Rate of tax; Exemption of subsequent sales; Determination of</p>	<p>UNIT-IV Registration under GST: Procedure for registration, Persons liable for registration, Persons not liable for registration, Compulsory registration. Exempted goods and services - Rates of GST. Procedure relating to Levy: (CGST &amp; SGST): Scope of supply, Tax liability on Mixed and Composite supply, Time of supply of goods and services, Value of taxable supply. E-way-Billing</p>	



### B.COM PART III

#### COMPULSORY CORE COURSE

TITLE OF PAPER - Group-II - PAPER – II -MANAGEMENT ACCOUNTING

#### OBJECTIVE

This course provides the students an understanding of the application of accounting techniques for management.

M.M. 75

Present syllabus	Proposed syllabus	Remark
UNIT-I Management Accounting : Meaning, nature, scope, and functions of management Accounting ; Role of management accounting in decision making; Management accounting vs financial accounting; Tools and techniques of management accounting ;Financial statement; Objectives and methods of financial statements analysis; Ratio analysis; Classification of ratios - Profitability ratios, turnover ratios, liquidity ratios,turnover ratios; Advantages of ratio analysis; Limitations of accounting ratios.	UNIT-I Management Accounting : Meaning, nature, scope, and functions of management Accounting ; Role of management accounting in decision making; Management accounting vs financial accounting; Tools and techniques of management accounting ;Financial statement; Objectives and methods of financial statements analysis; Ratio analysis; Classification of ratios - Profitability ratios, turnover ratios, liquidity ratios,turnover ratios; Advantages of ratio analysis; Limitations of accounting ratios.	No change
UNIT-II Funds Flow Statement as per Indian Accounting Standard 3, cash flow statement.	UNIT-II Funds Flow Statement as per Indian Accounting Standard 3, cash flow statement.	
UNIT-III Absorption and Marginal Costing : Marginal and differential costing as a tool for decision making - make or buy; Change of product mix; Pricing, Break-even analysis; Exploring new markets; Shutdown decisions.	UNIT-III Absorption and Marginal Costing : Marginal and differential costing as a tool for decision making - make or buy; Change of product mix; Pricing, Break-even analysis; Exploring new markets; Shutdown decisions.	
UNIT-IV Budgeting for profit Planning and control : Meaning of budget and budgetary control;Objectives; Merits and limitations; Types of budgets; Fixed and	UNIT-IV Budgeting for profit Planning and control : Meaning of budget and budgetary control;Objectives; Merits and limitations; Types of budgets; Fixed and	

flexible budgeting; Control ratios; Zero base budgeting; Responsibility accounting; Performance budgeting.	flexible budgeting; Control ratios; Zero base budgeting; Responsibility accounting; Performance budgeting.	
UNIT-V Standard Costing and Variance Analysis : Meaning of standard cost and standard costing; Advantages and application; Variance analysis - material; Labour and overhead (Two-way analysis); Variances.	UNIT-V Standard Costing and Variance Analysis : Meaning of standard cost and standard costing; Advantages and application; Variance analysis - material; Labour and overhead (Two-way analysis); Variances.	

**Suggested Reading :**

1. Arora M.N. : Cost Accounting - Principles and Practice, Vikas, New Delhi.
2. Jain S.P. & Narang K.L. : Cost Accounting; Kalyani, New Delhi.
3. Anthony, Rogert & Reece, at al : Principles of Management Accounting; Richard Irwin Inc.
4. Horngren, Charles, Foster and Datar et al : Cost Accounting - A Managerial Emphasis; Prentice Hall, New Delhi.
5. Khan M.Y. and Jain P.K. : Management Accounting : Tata McGraw Hill, New Delhi.
6. Kaplan R.S. and Atkinson A.A. : Advanced Management Accounting; Printice Hall India, New Delhi.
7. J.K. Agrawal & R.K. Agrawal : Jaipur (English & Hindi ).
8. Dr. M.R. Agrawal : Minakshi Prakashan Meruth.
9. Dr. S.P. Gupta - Agra (Hindi & English).

### B.COM PART III

#### COMPULSORY CORE COURSE

TITLE OF PAPER - Group-I - PAPER - II - AUDITING

#### OBJECTIVE

This course aims at imparting knowledge about the principles and methods of auditing and their applications.

M.M. 75

Present syllabus	Proposed syllabus	Remark
UNIT-I Introduction : Meaning and objectives of auditing; Types of audit; Internal audit. Audit Process : Audit programme; Audit note books; Working papers and evidences.	UNIT-I Introduction : Meaning and objectives of auditing; Types of audit; Internal audit. Audit Process : Audit programme; Audit note books; Working papers and evidences.	No change
UNIT-II Internal Check System : Internal control. Audit Procedure : Vouching : Verification of assets and liabilities.	UNIT-II Internal Check System : Internal control. Audit Procedure : Vouching : Verification of assets and liabilities.	No change
UNIT-III Audit of Limited Companies : a. Company auditor - Appointment, powers, duties, and liabilities. b. Divisible profits and dividend. c. Auditor's report - standard report and qualified report. d. Special audit of banking companies. e. Audit of educational institutions. f. Audit of Insurance companies.	UNIT-III Audit of Limited Companies : a. Company auditor -Qualification, Appointment, powers, duties, Resignation and liabilities. b. Divisible profits and dividend. c. Auditor's report - standard report and qualified report. d. Special audit of banking companies. e. Audit of educational institutions. f. Audit of Insurance companies.	Added . Qualificati on and Resignatio n of company auditor
UNIT-IV Investigation : Investigation; Audit of non profit companies, a. Where fraud is suspected, and b. When a running a business is proposed. c. Varifications & Valuation of assets.	UNIT-IV Investigation : Investigation; Audit of non profit companies, a. Where fraud is suspected, and b. When a running a business is proposed. c. Varifications & Valuation of assets.	No change

UNIT-V Recent Trends in Auditing : Nature and significance of cost audit; Tax audit; Management audit. Company auditing - Qualification, Appointment, Resignation and liabilities.	UNIT-V Recent Trends in Auditing : Nature and significance of cost audit; Tax audit; Management audit .	Omitted company auditing - Qualification , Appointment , Resignation and Liabilities and merge it in II unit.
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Suggested Reading :

1. Gupta KaPal : Contemporary Auditing : Tata Mcgraw Hill, New Delhi.
2. Tandon B.N. : Principles of Auditing : S. Chand & Co., New Delhi.
3. Pagare Dinkar : Principles and Practice of Auditing : Sultan Chand, New Delhi.
4. Sharma T.R. : Auditing Principles and Problems, Sahitya Bhawan, Agra.
5. Shukla S.M. : Auditing - Shahitya Bhavan, Agra, (Hindi)
6. Batliboy : Auditing.

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**B.COM PART III**

OPTIONAL GROUP B (Marketing Area)

TITLE OF PAPER - INTERNATIONAL MARKETING

PAPER - II

**OBJECTIVE**

This course aims at acquainting student with the operations of marketing in international environment.

M.M. 75

Present syllabus	Proposed syllabus	Remark
UNIT-I International Marketing : Nature, definition, and scope of international marketing; Domestic marketing vs. International marketing; International environment external and internal.	UNIT-I International Marketing : Nature, definition, and scope of international marketing; Domestic marketing vs. International marketing; International environment external and internal.	No change
UNIT-II Identifying and Selecting Foreign Market : Foreign market entry mode decisions. Product Planning for international Market : Product designing; Standardization vs. adaptation ; Branding and packaging; Labeling and quality issues; After sales service. International Pricing : Factors Influenceing International price; Pricing process-process and methods; International price quotation and payment terms.	UNIT-II Identifying and Selecting Foreign Market : Foreign market entry mode decisions. Product Planning for international Market : Product designing; Standardization vs. adaptation ; Branding and packaging; Labeling and quality issues; After sales service. International Pricing : Factors Influenceing International price; Pricing process-process and methods; International price quotation and payment terms.	No change
UNIT-III Promotion of Product/Services Abroad : Methods of international promotion; Direct mail and sales literature; Advertising; Personal selling; Trade fairs and exhibitions.	UNIT-III Promotion of Product/Services Abroad : Methods of international promotion; Direct mail and sales literature; Advertising; Personal selling; Trade fairs and exhibitions.	No change
UNIT-IV International Distribution : Distribution channels and logistics decisions; Selection and appointment of foreign sales agents.	UNIT-IV International Distribution : Distribution channels and logistics decisions; Selection and appointment of foreign sales agents.	No change
UNIT-V Export Policy and Practices in India : Exim policy - an overview; Trends in India's foreign trade; Steps in	UNIT-V Export Policy and Practices in India : Exim policy - an overview; Trends in India's foreign trade;	Added Marketing

choice of a distribution channel; Retailer and wholesaler; Physical distribution of goods; Transportation, Warehousing, Inventory control; Order processing.	distribution channel; Retailer and wholesaler; Physical distribution of goods; Transportation, Warehousing, Inventory control; Order processing.	
UNIT-V Promotion : Methods of promotion; Optimum promotion mix; Advertising media – their relative merits and limitations; Characteristics of an effective advertisement; Personal selling; Selling as a career; Classification of successful sales person; Functions of salesman.	UNIT-V Promotion : Methods of promotion; Optimum promotion mix; Advertising media – their relative merits and limitations; Characteristics of an effective advertisement; Personal selling; Selling as a career; Classification of successful sales person; Functions of salesman. Recent development in marketing – social marketing, online marketing, Direct marketing, Services marketing, Green marketing.	Added Recent trends in marketing

Suggested Reading :

1. Philip Kotler : Marketing Management Englewood Cliffs; Prentice Hall, N.J.
2. William M. Pride and O.C. Ferrell : Marketing : Houghton - Mifflin Boston.
3. Stanton W.J. Etzel Michael J., and Walker Bruce J. Fundamentals of Marketing; McGraw Hill, New York.
4. Lamb Charles W., Hair Joseph F. and McDaniel Carl : Principles of Marketing; South- Western-Publishing, Cincinnati, Ohio.
5. Cravens David W. Hills Gerald E., Woodruff Robert B : Marketing management : Richard D. Irwin, Homewood Illinois.
6. Kotler Philip and Armstrong Gary : Principles of Marketing; Prentice Hall of India, New Delhi.
7. Dr. R.C. Agrawal, Agra.
8. Dr. S.C. Saxena Agra.
9. Dr. S.K. Jain, Hindi Granth Academi. M.P.
10. Dr. N.C. Jain

**B.COM PART III**

OPTIONAL GROUP B (Marketing Area)

PAPER - I

TITLE OF PAPER - PRINCIPLES OF MARKETING

OBJECTIVE

The Objective of this course is to help students to understand the concept of marketing and its applications.

M.M. 75

Present syllabus	Proposed syllabus	Remark
UNIT-I Introduction : Nature and scope of marketing; Importance of marketing as a business function, and in the economy; Marketing concepts - traditional and modern; Selling vs. marketing; Marketing mix; Marketing environment.	UNIT-I Introduction : Nature and scope of marketing; Importance of marketing as a business function, and in the economy; Marketing concepts - traditional and modern; Selling vs. marketing; Marketing mix; Marketing environment.	No change
UNIT-II Consumer Behaviour and Market Segmentation : Nature, scope, and significance of consumer behaviour; Market segmentation - concept and importance; Bases for market segmentation.	UNIT-II Consumer Behaviour and Market Segmentation : Nature, scope, and significance of consumer behaviour; Market segmentation - concept and importance; Bases for market segmentation.	No change
UNIT-III Product : Concept of product, consumer, and industrial goods; Product planning and development; Packaging role and functions; Brand name and trade mark; after sales service; Product life cycle concept. Price : Importance of price in the marketing mix; Factors affecting price of a product/ Service ; Discounts and rebates.	UNIT-III Product : Concept of product, consumer, and industrial goods; Product planning and development; Packaging role and functions; Brand name and trade mark; after sales service; Product life cycle concept. Price : Importance of price in the marketing mix; Factors affecting price of a product/service; Discounts and rebates.	No change
UNIT-IV Distributions Channels and Physical Distribution; Distribution channels - Concept and role; Types of distribution channels. Factors affecting	UNIT-IV Distributions Channels and Physical Distribution; Distribution channels - Concept and role; Types of distribution channels. Factors affecting choice of a	No change

starting an export business; Product selection; Market selection; Export pricing; Export finance; Documentation; Export procedures; Export assistance and incentives.	Steps in starting an export business; Product selection; Market selection; Export pricing; Export finance; Documentation; Export procedures; Export assistance and incentives. Marketing Control Process	Control Process
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**Suggested Reading :**

1. Bhattacharya R.L. and Varshney B. : International Marketing Management; Sultan Chand, New Delhi.
  2. Bhattacharya B. : Export Marketing Strategies for Success; Global Press, New Delhi.
  3. Keegan W.J. : Multinational Marketing Management; Prentice Hall, New Delhi.
  4. Kriplani V. : International marketing; Prentice Hall New Delhi.
  5. Taggart J.H. and Moder Mott. M.C. : The Essence of International Business; Prentice Hall New Delhi.
  6. Kotler Phillip : Principles of Marketing; Prentice Hall New Delhi.
  7. Fayer Weather John : International Marketing; Prentice Hall N.J.
  8. Caterora P.M. and Keavenay S.M. : Marketing an international Perspective; Erwin Homewood, Illinois.
  9. Paliwala, Stanely J. The Essence of International marketing; Prentice Hall, New Delhi.
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## NEW CURRICULUM OF B.Sc. PART III

### CHEMISTRY

The new curriculum will comprise of three papers of 33, 33 and 34 marks each and practical work of 50 marks. The Curriculum is to be completed in 180 working days as per UGC norms and conforming to the directives of Govt. of Chhattisgarh. The theory papers are of 60 hrs. each duration and practical work of 180 hrs duration.

#### Paper – I INORGANIC CHEMISTRY 60 Hrs., Max Marks 33

##### UNIT-I

##### METAL-LIGAND BONDING IN TRANSITION METAL COMPLEXES

(A) Limitations of valence bond theory, Limitation of Crystal Field Theory, Application of CFSE, tetragonal distortions from octahedral geometry, Jahn–Teller distortion, square planar geometry. Qualitative aspect of Ligand field and MO Theory.

(B) Thermodynamic and kinetic aspects of metal complexes. A brief outline of thermodynamic stability of metal complexes and factors affecting the stability, substitution reactions of square planar complexes, Trans- effect, theories of trans effect. Mechanism of substitution reactions of square planar complexes.

##### UNIT-II

##### MAGNETIC PROPERTIES OF TRANSITION METAL COMPLEXES

Types of magnetic behavior, methods of determining magnetic susceptibility, spin only formula, L-S coupling, correlation of  $\mu_{so(\text{spin only})}$  and  $\mu_{\text{eff}}$  values, orbital contribution to magnetic moments, application of magnetic moment data for 3d metal complexes.

Electronic spectra of Transition Metal Complexes.

Types of electronic transitions, selection rules for d-d transitions, spectroscopic ground states, spectro-chemical series. Orgel-energy level diagram for  $d^1$  and  $d^2$  states, discussion of the electronic spectrum of  $[\text{Ti}(\text{H}_2\text{O})_6]^{3+}$  complex ion.

### UNIT-III

#### ORGANOMETALLIC CHEMISTRY

Definition and classification of organometallic compounds on the basis of bond type. Concept of hapticity of organic ligands. Metal carbonyls: 18-electron rule, electron count of mononuclear, polynuclear and substituted metal carbonyls of 3d series. General methods of preparation (direct combination, reductive carbonylation, thermal and photochemical decomposition) of mono and binuclear carbonyls of 3d series.

Structures of mononuclear and binuclear carbonyls of Cr, Mn, Fe, Co and Ni using VBT.  $\pi$ -acceptor behavior of CO (MO diagram of CO to be discussed), Zeise's salt: Preparation and structure.

#### Catalysis by Organometallic Compounds –

Study of the following industrial processes and their mechanism :

1. Alkene hydrogenation (Wilkinson's Catalyst)
2. Polymerization of ethane using Ziegler – Natta Catalyst

### UNIT-IV

#### BIOINORGANIC CHEMISTRY

Essential and trace elements in biological processes, Excess and deficiency of some trace metals, Toxicity of some metal ions (Hg, Pb, Cd and As), metalloporphyrins with special reference to hemoglobin and myoglobin. Biological role of alkali and alkaline earth metals with special reference to  $\text{Ca}^{2+}$  and  $\text{Mg}^{2+}$ , nitrogen fixation.

### UNIT-V

**HARD AND SOFT ACIDS AND BASES (HSAB)** Classification of acids and bases as hard and soft. Pearson's HSAB concept, acid-base strength and hardness and softness. Symbiosis, Applications of HSAB principle.

#### INORGANIC POLYMERS

Types of inorganic polymers, comparison with organic polymers, synthesis, structural aspects and applications of silicones. Silicates, phosphazenes and polyphosphate.

**UNIT-I**  
**HETEROCYCLIC COMPOUNDS**

Classification and nomenclature, Structure, aromaticity in 5-membered and 6-membered rings containing one heteroatom; Synthesis, reactions and mechanism of substitution reactions of: Furan, Pyrrole (Paal-Knorr synthesis, Knorr pyrrole synthesis, Hantzsch synthesis), Thiophene, Pyridine (Hantzsch synthesis), Indole (Fischer indole synthesis and Madelung synthesis), Quinoline and isoquinoline, (Skraup synthesis, Friedlander's synthesis, Knorr quinoline synthesis, Doebner-Miller synthesis, Bischler-Napieralski reaction, Pictet- Spengler reaction, Pomeranz-Fritsch reaction).

**UNIT II**

**A. ORGANOMETALLIC REAGENT**

Organomagnesium compounds: Grignard reagents formation, structure and chemical reactions.

Organozinc compounds: formation and chemical reactions.

Organolithium compounds: formation and chemical reactions.

**B. ORGANIC SYNTHESIS VIA ENOLATES**

Active methylene group, alkylation of diethylmalonate and ethyl acetoacetate, Synthesis of ethyl acetoacetate: The Claisen condensation. Keto-enol tautomerism of ethyl acetoacetate. Robinson annulations reaction.

**UNIT-III**  
**BIOMOLECULES**

**A. CARBOHYDRATES**

Occurrence, classification and their biological importance. Monosaccharides: relative and absolute configuration of glucose and fructose, epimers and anomers, mutarotation, determination of ring size of glucose and fructose, Haworth projections and conformational structures; Interconversions of aldoses and ketoses; Killiani Fischer synthesis and Ruff degradation; Disaccharides – Structural comparison of maltose, lactose and sucrose. Polysaccharides – Elementary treatment of starch and cellulose.

**B. AMINO ACIDS, PROTEINS AND NUCLEIC ACIDS**

Classification and Nomenclature of amino acids, Configuration and acid base properties of amino acids, Isoelectric Point, Peptide bonds, Protein structure, denaturation/ renaturation, Constituents of nucleic acid, DNA, RNA nucleoside, nucleotides, double helical structure of DNA.

**UNIT-IV**

**SYNTHETIC POLYMERS**

**A.** Addition or chain growth polymerization, Free radical vinyl polymerization, Ziegler-Natta polymerization, Condensation or Step growth polymerization, polyesters, polyamides, phenols- formaldehyde resins, urea-formaldehyde resins, epoxy resins and polyurethanes, natural and synthetic rubbers.

**B. SYNTHETIC DYES**

Colour and constitution (Electronic Concept). Classification of Dyes. Chemistry of dyes. Chemistry and synthesis of Methyl Orange, Congo Red, Malachite Green, Crystal Violet, phenolphthalein, fluorescein, Alizarine and Indigo.

**UNIT-V**

**A. INFRA-RED SPECTROSCOPY**

Basic principle, IR absorption Band their position and intensity, IR spectra of organic compounds.

**B. UV-VISIBLE SPECTROSCOPY**

Beer Lambert's law, effect of Conjugation, Types of electronic transitions  $\lambda_{max}$ , Chromophores and Auxochromes, Bathochromic and Hypsochromic shifts, Intensity of absorption Visible spectrum and colour.

**C. NMR SPECTROSCOPY**

Basic principles of Proton Magnetic Resonance, Tetramethyl silane (TMS) as internal standard, chemical shift and factors influencing it; Spin – Spin coupling and coupling constant (J); Anisotropic effects in alkene, alkyne, aldehydes and aromatics, Interpretation of NMR spectra of simple organic compounds. <sup>13</sup>CMR spectroscopy: Principle and applications.

**UNIT-I**

**QUANTUM MECHANICS-I**

Black-body radiation, Planck's radiation law, photoelectric effect, Compton effect. Operator: Hamiltonian operator, angular momentum operator, Laplacian operator, postulate of quantum mechanics, eigen values, eigen function, Schrodinger time independent wave equation, physical significance of  $\psi$  &  $\psi^2$ , application of Schrodinger wave equation to particle in a one dimensional box, hydrogen atom (separation into three equations ) radial and angular wave functions.

**UNIT-II**

**A. QUANTUM MECHANICS-II**

Quantum Mechanical approach of Molecular orbital theory, basic ideas-criteria for forming M.O. and A.O., LCAO approximation, formation of  $H_2^+$  ion, calculation of energy levels from wave functions, bonding and antibonding wave functions, Concept of  $\sigma$ ,  $\sigma^*$ ,  $\pi$ ,  $\pi^*$  orbitals and their characteristics, Hybrid orbitals- $sp$ ,  $sp^2$ ,  $sp^3$  Calculation of coefficients of A.O.'s used in these hybrid orbitals.

Introduction to valence bond model of  $H_2$ , comparison of M.O. and V.B. models. Huckel theory, application of Huckel theory to ethene, propene, etc.

**UNIT III**

**SPECTROSCOPY**

**Introduction:** Characterization of Electromagnetic radiation, regions of the spectrum, representation of spectra, width and intensity of spectral transition, Rotational Spectrum of Diatomic molecules. Energy levels of a rigid rotor, selection rules, determination of bond length, qualitative description of non-rigid rotor, isotopic effect.

**Vibrational Spectroscopy:** Fundamental vibration and their symmetry vibrating diatomic molecules, Energy levels of simple harmonic oscillator, selection rules, pure vibrational spectrum, determination of force constant, anharmonic oscillator

**Raman spectrum:** Concept of polarizability, quantum theory of Raman spectra, stokes and antistokes lines, pure rotational and pure vibrational Raman spectra. Applications of Raman Spectra.

**Electronic Spectroscopy:** Basic principles, Electronic Spectra of diatomic molecule, Franck-Condon principle, types of electronic transition, application of electronic spectra.

#### UNIT-IV

##### ELECTROCHEMISTRY-I

- A. Electrolytic conductance: Specific and equivalent conductance, measurement of equivalent conductance, effect of dilution on conductance, Kohlrausch law, application of Kohlrausch law in determination of dissociation constant of weak electrolyte, solubility of sparingly soluble electrolyte, absolute velocity of ions, ionic product of water, conductometric titrations.
- B. Theories of strong electrolyte: limitations of Ostwald's dilution law, weak and strong electrolytes, Elementary ideas of Debye-Huckel-Onsager's equation for strong electrolytes, relaxation and electrophoretic effects.
- C. Migration of ions: Transport number, Determination by Hittorf method and moving boundary method, ionic strength.

#### UNIT-V

##### ELECTROCHEMISTRY-II

- A. Electrochemical cell and Galvanic cells – reversible and irreversible cells, conventional representation of electrochemical cells, EMF of the cell and effect of temperature on EMF of the cell, Nernst equation Calculation of  $\Delta G$ ,  $\Delta H$  and  $\Delta S$  for cell reactions.
- B. Single electrode potential : standard hydrogen electrode, calomel electrode, quinhydrone electrode, redox electrodes, electrochemical series
- C. Concentration cell with and without transport, liquid - junction potential, application of concentration cells in determining of valency of ions, solubility product and activity coefficient
- D. Corrosion-types, theories and prevention

**B.Sc. Part- III**

**PRACTICAL**

**Max. Marks-50**

**INORGANIC CHEMISTRY**

**Gravimetric analysis:**

- Estimation of nickel (II) using Dimethylglyoxime (DMG).
- Estimation of copper as  $\text{CuSCN}$
- Estimation of iron as  $\text{Fe}_2\text{O}_3$  by precipitating iron as  $\text{Fe}(\text{OH})_3$ .
- Estimation of Al (III) by precipitating with oxine and weighing as  $\text{Al}(\text{oxine})_3$  (aluminium oxinate).
- Estimation of Barium as  $\text{BaSO}_4$

**Inorganic Preparations:**

- Tetraamminecopper (II) sulphate,  $[\text{Cu}(\text{NH}_3)_4]\text{SO}_4 \cdot \text{H}_2\text{O}$
- Cis and trans  $\text{K}[\text{Cr}(\text{C}_2\text{O}_4)_2 \cdot (\text{H}_2\text{O})_2]$  Potassium dioxalato diaquachromate(III)
- Tetraamminecarbonatocobalt (III) ion
- Potassium tris(oxalate)ferrate(III)/ Sodium tris(oxalate)ferrate(III)
- Cu(I) thiourea complex, Bis (2,4-pentanedionate) zinc hydrate; Double salts (Chrome alum/ Mohr's salt)

**ORGANIC CHEMISTRY**

**I. Preparation of organic Compounds**

- Acetylation of one of the following compounds: amines (aniline, o-, m-, p- toluidines and o-, m-, p-anisidine) and phenols ( $\beta$ -naphthol, vanillin, salicylic acid)
- Benzoylation of one of the following amines (aniline, o-, m-, p- toluidines and o-, m-, panisidine) and one of the following phenols ( $\beta$ -naphthol, resorcinol, p cresol) by Schotten-Baumann reaction.
- Bromination of any one of the following: a. Acetanilide by conventional methods b. Acetanilide using green approach (Bromate-bromide method)
- Nitration of any one of the following: a. Acetanilide/nitrobenzene by conventional method b. Salicylic acid by green approach (using ceric ammonium nitrate).
- Reduction of p-nitrobenzaldehyde by sodium borohydride.
- Hydrolysis of amides and esters.
- Semicarbazone of any one of the following compounds: acetone, ethyl methyl ketone, cyclohexanone, benzaldehyde.

- Benzylisothiuronium salt of one each of water soluble and water insoluble acids (benzoic acid, oxalic acid, phenyl acetic acid and phthalic acid).
- Aldol condensation using either conventional or green method.
- Benzil-Benzilic acid rearrangement.
- Preparation of sodium polyacrylate.
- Preparation of urea formaldehyde.
- Preparation of methyl orange.

The above derivatives should be prepared using 0.5-1g of the organic compound. The solid samples must be collected and may be used for recrystallization, melting point and TLC.

2. Qualitative Analysis Analysis of an organic mixture containing two solid components using water,  $\text{NaHCO}_3$ ,  $\text{NaOH}$  for separation and preparation of suitable derivatives.
3. Extraction of caffeine from tea leaves.
4. Analysis of Carbohydrate: aldoses and ketoses, reducing and non-reducing sugars.
5. Identification of simple organic compounds by IR spectroscopy and NMR spectroscopy. (Spectra to be provided).
6. Estimation of glycine by Sorenson's formalin method.
7. Study of the titration curve of glycine.
8. Estimation of proteins by Lowry's method.
9. Study of the action of salivary amylase on starch at optimum conditions.
10. Effect of temperature on the action of salivary amylase.

## PHYSICAL CHEMISTRY

### Conductometry

- Determination of cell constant
- Determination of equivalent conductance, degree of dissociation and dissociation constant of a weak acid.
- Perform the following conductometric titrations:
  - i. Strong acid vs. strong base
  - ii. Weak acid vs. strong base
  - iii. Mixture of strong acid and weak acid vs. strong base
  - iv. Strong acid vs. weak base
- To determine the strength of the given acid conductometrically using standard alkali solution.
- To determine the solubility and solubility product of a sparingly soluble electrolyte conductometrically
- To study the saponification of ethyl acetate conductometrically.



### Potentiometry/pH metry

Perform the following potentiometric titrations:

- i. Strong acid vs. strong base
- ii. Weak acid vs. strong base
- iii. Dibasic acid vs. strong base
- iv. Potassium dichromate vs. Mohr's salt
- v. Determination of pKa of monobasic acid

### UV/ Visible spectroscopy

- Verify Lambert-Beer's law and determine the concentration of  $\text{CuSO}_4/\text{KMnO}_4/\text{K}_2\text{Cr}_2\text{O}_7$  in a solution of unknown concentration
- Determine the concentrations of  $\text{KMnO}_4$  and  $\text{K}_2\text{Cr}_2\text{O}_7$  in a mixture.
- Study the kinetics of iodination of propanone in acidic medium.
- Determine the amount of iron present in a sample using 1,10-phenanthroline.
- Determine the dissociation constant of an indicator (phenolphthalein).
- Study the kinetics of interaction of crystal violet/ phenolphthalein with sodium hydroxide.
- Study of pH-dependence of the UV-Vis spectrum (200-500 nm) of potassium dichromate.
- Spectral characteristics study (UV) of given compounds (acetone, acetaldehyde, acetic acid, etc.) in water.
- Absorption spectra of  $\text{KMnO}_4$  and  $\text{K}_2\text{Cr}_2\text{O}_7$  (in 0.1 M  $\text{H}_2\text{SO}_4$ ) and determine  $\lambda_{\text{max}}$  values.

*Note:* Experiments may be added/deleted subject to availability of time and facilities

### REFERENCE BOOKS:

1. Vogel, A.I. Quantitative Organic Analysis, Part 3, Pearson (2012).31
2. Mann, F.G. & Saunders, B.C. Practical Organic Chemistry, Pearson Education (2009)
3. Furniss, B.S.; Hannaford, A.J.; Smith, P.W.G.; Tatchell, A.R. Practical Organic Chemistry, 5th Ed., Pearson (2012)
4. Ahluwalia, V.K. & Aggarwal, R. Comprehensive Practical Organic Chemistry: Preparation and Quantitative Analysis, University Press (2000).
5. Ahluwalia, V.K. & Dhingra, S. Comprehensive Practical Organic Chemistry: Qualitative Analysis, University Press (2000)
6. Manual of Biochemistry Workshop, 2012, Department of Chemistry, University of Delhi.

**Zoology**  
**B.Sc. Part III 2018-19**  
**Paper-I**

**ECOLOGY, ENVIRONMENTAL BIOLOGY: TOXICOLOGY,  
MICROBIOLOGY AND MEDICAL ZOOLOGY**

**Unit: I (Ecology)**

- Aims and scopes of ecology
- Major ecosystems of the world-Brief introduction
- Population- Characteristics and regulation of densities
- Communities and ecosystem
- Bio-geo chemical cycles
- Air & water pollution
- Ecological succession

**Unit: II (Environmental Biology)**

- Laws of limiting factor
- Food chain in fresh water ecosystem
- Energy flow in ecosystem- Trophic levels
- Conservation of natural resources
- Environmental impact assessment

**Unit: III (Toxicology)**

- Definition and classification of Toxicants
- Basic Concept of toxicology
- Principal of systematic toxicology
- Heavy metal Toxicity (Arsenic, Mercury, Lead, Cadmium)
- Animal poisons- snake venom, scorpion & bee poisoning
- Food poisoning

**Unit: IV (Microbiology)**

- General and applied microbiology
- Microbiology of domestic water and sewage
- Microbiology of milk & milk products
- Industrial microbiology: fermentation process, production of penicillin, alcoholic beverages, bioleaching.

**Unit: V (Medical Zoology)**

- Brief introduction to pathogenic microorganisms, Rickettsia, Spirochaetes, AIDS and Typhoid
- Brief account of life history & pathogenicity of the following pathogens with reference to man: prophylaxis & treatment
- Pathogenic protozoan's- Entamoeba, Trypanosome & Plasmodium
- Pathogenic helminthes- Schistosoma
- Nematode pathogenic parasites of man
- Vector insects

**Zoology**  
**B.Sc. Part III 2018-19**  
**Paper II**

**GENETICS, CELL PHYSIOLOGY, BIOCHEMISTRY, BIOTECHNOLOGY AND BIOTECHNIQUES**

**Unit: I (Genetics)**

- Linkage & linkage maps, Sex Determination and Sex Linkage
- Gene interaction- Incomplete dominance & Codominance, Supplementary gene, Complementary gene, Epistasis Lethal gene, Pleiotropic gene and multiple alleles.
- Mutation: Gene and chromosomal mutation
- Human genetics: chromosomal alteration: Down, Edward, Patau, Turner and Klinefelter Syndrome Single gene disorders: Alkaptonuria, Phenylketonuria, Sickle cell anemia, albinism and colour blindness

**Unit: II (Cell Physiology)**

- General idea about pH & buffer
- Transport across membrane: Diffusion and Osmosis
- Active transport in mitochondria & endoplasmic reticulum
- Enzymes-classification and Action

**Unit: III (Biochemistry)**

- Amino acids & peptides- Basic structure & biological function
- Carbohydrates & its metabolism- Glycogenesis; Gluconeogenesis; Glycolysis; Glycogenolysis; Cose-cycle
- Lipid metabolism- Oxidation of glycerol; Oxidation of fatty acids
- Protein Catabolism- Deamination, transamination, transmethylation

**Unit: IV (Biotechnology)**

- Application of Biotechnology
- Recombinant DNA & Gene cloning
- Cloned genes & other tools of biotechnology (Tissue culture, Hybridoma, Transgenic Animals and Gene library)

**Unit: V (Biotechniques)**

1. Principles & techniques about the following:
  - (i) pH meter
  - (ii) Colorimeter
  - (iii) Microscopy- Light microscopes: Compound, Phase contrast & Electron microscopes
  - (iv) Centrifuge
  - (v) Separation of biomolecules by chromatography & electrophoresis

**B. Sc. Part III 2018-19**  
**Zoology**  
**Practical**

The practical work in general shall be based on syllabus prescribed in theory.

The candidates will be required to show knowledge of the following:

- Estimation of population density, percentage frequency, relative density.
- Analysis of producers and consumers in grassland.
- Detection of gram-negative and gram-positive bacteria.
- Blood group detection (A,B,AB,O)
- R. B. C. and W.B.C count
- Blood coagulation time
- Preparation of hematin crystals from blood of rat
- Observation of Drosophila, wild and mutant.
- Chromatography-Paper or gel.
- Colorimetric estimation of Protein.
- Mitosis in onion root tip.
- Biochemical detection of Carbohydrate, Protein and Lipid.
- Study of permanent slides of parasites, based on theory paper.
- Working principles of pH meter, colorimeter, centrifuge and microscope.

**Scheme of marks distribution**

**Time: 3:30hrs**

• Hematological Experiment	08
• Ecological Experiment: Grassland Ecosystem/ Population Density/Frequency/relative density	06
• Bacterial staining	05
• Biochemical experiment	06
• Practical based on Instrumentation (Chromatography/ pH meter/microscope/centrifuge.	05
• Spotting (5 spots)	10
7 Viva	05
8. Sessional	05

**B.SC.-III (BOTANY) PAPER -I**

**(ANALYTICAL TECHNOLOGY PLANT PATHOLOGY,  
EXPERIMENTAL EMBRYOLOGY, ELEMENTARY BIOSTATISTICS,  
ENVIRONMENTAL POLLUTION AND CONSERVATION)**

**UNIT-I**

Structure, Principle and applications of analytical instrumentation.

Chromatography technique, Oven, Incubator, Autoclave, Centrifuge, Spectrophotometer

**UNIT-II**

Plant Tissue culture techniques, growth media, totipotency, protoplast culture, somatic hybrids and cybrids, micropropagation, somaclonal variations, haploid culture.

Analytical techniques: Microscopy-Light microscope, Electron microscope

**UNIT-III**

General principles of plant pathology, general symptoms of fungal, bacterial and viral diseases, mode of infection, diseases resistance and control measures, plant quarantine. A study of epidemiology and etiology of following plant diseases.

Rust diseases of wheat, Tikka diseases of ground nut, Red rot of sugar can, Bacterial blight of rice, Yellow vein mosaic of b hindi, Little leaf of brinjal.

**UNIT-IV**

Introduction to pollution, green house gases, Ozone depletion, Dissolve oxygen, B.O.D., C.O.D.

Bio magnification, Eutrophication, Acid precipitation, Phytoremediation, Plant indicators, Biogeographical Zones of India, Concept of biodiversity, CBD, MAB, National parks and

biodiversity Hot spots, Conservation strategies, Red Data Book, IUCN threat categories, invasive species, endemic species, concept of sustainable development.

## UNIT-V

### ELEMENTARY BIOSTATISTICS:

Introduction and application of Biostatistics, measure of central tendency-Mean, Median, Mode, measures of dispersal-Standard deviation, standard error.

#### Books Recommended:

Singh, RS, *Plant Diseases*, Oxford & IBH, New Delhi.

Pandey, BP, *Plant Pathology*, S.Chand Publishing, New Delhi

Sharma, PD, *Microbiology and Plant pathology*, Rastogi Publications, Meerut

Sharma PD, *Mycology and Phytopathology*, Rastogi Publications, Meerut

Singh JS, Singh SP and Gupta, SR, *Ecology Environmental Science and Conservation*, S. Chand Publishing, New Delhi

Sharma, PD. *Ecology and Environment*, Rastogi Publications, Meerut

Bhojwani, SS and Razdan, MK, *Plant Tissue Culture: Theory and Practices*, Elsevier

Sharma AK, *Text book of Biostatistics*, Discovery Publishing House Pvt. Ltd.



(Dr. J.N. Verma)

Proff. & Head

Govt. D.B. Girls PG College

Raipur, (C.G.)



(Dr. Rekha Pimpalgaonkar)

Proff. & Head

Govt. N PG Science College

Raipur, (C.G.)



(Dr. Ranjana Shrivastava)

Proff. & Head

Govt. VYTPG Science College

Raipur, (C.G.)



(Mrs. Sanchal Moghe)



(Mr. Shivakant Mishra)

(Mr. Sudheer Tiwari)

**B.Sc.-III (BOTANY) PAPER -II**  
**(GENETICS, MOLECULAR BIOLOGY, BIOTECHNOLOGY AND**  
**BIOCHEMISTRY)**

**UNIT-I**

Cell and cell organelles, organization and morphology of chromosomes, giant chromosomes, cell division, Mendel's laws, gene interactions, linkage and crossing over, chromosomal aberration, polyploidy, sex linked inheritance, sex determination, cytoplasmic inheritance, gene concept: cistron, muton, recon.

**UNIT-II**

Nucleic acids, structure and forms of DNA and RNA, DNA/RNA as genetic material, replication of DNA, biochemical and molecular basis of mutation, genetic code and its properties, mechanism of transcription and translation in prokaryotes, regulation of gene expression, Operon model.

**UNIT-III**

Recombinant DNA, Enzymes in recombinant DNA technology, cloning vectors (Plasmid, Bacteriophages, Cosmids, Phagemids), gene cloning, PCR, Application of Biotechnology; G.M.Plants, Monoclonal antibodies, DNA finger printing

**UNIT-IV**

Protein: Chemical composition, primary, secondary and tertiary structure of Proteins.

Carbohydrate: general account of monosaccharides, disaccharids and Polysaccharides

Fat: Structure and properties of fats and fatty acids, synthesis and breakdown.

**UNIT-V**

ENZYMES: Nomenclature and classification, components of enzyme, theories of enzyme action, enzyme kinetics (Michaelis-Menten constant), allosteric enzymes, isozymes, Abzymes. Ribozymes, factors affecting enzyme activity.

**Books Recommended:**

Nelson, DL, Cox, MM, Lehninger *Principles of Biochemistry*, W.H. freeman and Company, New York, USA.

Cooper, GM, *The Cell: A Molecular Approach*, ASM Press & Sunderland, Washington, D.C. Sinauer Associates, MA.

Singh BD, *Fundamental of Genetics*, Kalyani Publication

Singh BD, *Genetics*, Kalyani Publication

Gupta, PK, *Cell and Molecular Biology*, Rastogi Publications, Meerut

Singh, BD, *Biotechnology: Expanding Horizons*, Kalyani publications

Gupta, PK, *Elements of Plant Biotechnology*, Rastogi Publications, Meerut

Gupta, SN, *Concepts of Biochemistry*, Rastogi Publications, Meeru

Jain, JL., Jain S, Jain, N, *Fundamentals of Biochemistry*, S Chand Publishing, New Delhi

**B.Sc.-III (Botany)**

**Practical**

1. Study of host parasite relationship pf plant diseases listed above.
2. Demonstration of preparation of Czapek's Dox medium and Potato dextrose agar medium, sterilization of culture medium and pouring.
3. Inoculation in culture tubes and petriplates.
4. Gram Staining.
5. Microscopic examination of Curd.
6. Study of plant diseases as listed in the theory paper.
7. Biochemical test of carbohydrate and protein.
8. Instrumentation techniques

  
**Principal**  
Govt. Sant Rameshwar  
Gahira Guru ji College  
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