GOVT. BILASA GIRLS' P.G. (Auto.) COLLEGE

Link Road, Bilaspur (C.G.)
Phone No. : 07752-224249, Website : www.bilasagrilscollege.ac.in

शासकीय बिलासा कन्या स्नातकोत्तर महाविद्यालय
बिलासपुर (छ.ग.)

SYLLABUS

B.Sc. Food & Quality Control
Semester - V & VI

2021-22

Rules and Regulations for the Semester System at the Graduation Level

1. These subjects are compulsory for all students:-
   (a) Environmental Studies (I Semester)
   (b) English Language (II and III Semester)
   (c) Hindi Language (IV and V Semester)
   (d) Skill Based Course (VI Semester)
2. In each semester there will be only one theory paper in each elective Subject.
3. For Honours Degree Course, there will be one additional theory paper in each semester i.e. semesters, III to VI.

   For Honours Degree Course, separate practical classes will be held round the year but the examinations shall be held only in even semesters i.e. semesters II, IV and VI.
4. **Marks Pattern:-**
   (i) For non practical subjects, each theory paper will be of 100 marks i.e. 80 External + 20 Internal.
   (ii) For practical subjects, each theory paper will be of 75 marks i.e. 60 External + 15 Internal.
   (iii) Practical examination will be of 50 marks. Practical Classes will be held round the year but examination shall be held only in even semesters i.e. semesters II, IV and VI.
5. **Theory Examination:-**

   Duration for theory examination shall be of two and half hours.
6. **Practical Examination:-**

   Duration for Practical examination shall be as suggested in the syllabi.
7. **Admission Period:-**
   (i) Admissions in the First Semester shall be completed before 15th of July every year.
   (ii) Admissions in Semesters i.e. II, III, IV, V and VI shall be completed within 7 days after the completion of examinations on the provisional basis.
   (iii) The provisional admission shall be regularized within 7 days from the date of declaration of result.
   (iv) Request for permission for late admission shall not be entertained.
8. **Schedule of Classes-**
   (i) I Semester's classes will be commenced from 16th of July every year
   (ii) III and V Semester's classes will be commenced from 2nd July every year.
   (iii) II, IV and VI Semester's classes will be commenced from 2nd January every year.
   (iv) All the classes shall be continued till seven days prior to the commencement of the examination.
9. **Examination Schedule- Tentative Schedules of examinations are as under-**
   (i) Odd semester (I, III & V)- 20th November to 20th December.
   (ii) Even semester (II, IV & VI) - 15th April to 14th May.
10. **Examination Pattern -**
   (a) Questions will be asked Unit wise and Section wise. Questions will be set from all Units Covering the entire syllabi.
   (b) For non practical subjects, maximum marks will be 80 (External).
   (c) For the practical based subjects, maximum marks will be 60 (External).
   (d) In each theory paper there will be three sections and the marks distributed for different sections will be in the following pattern –

Theory (Non- Practical):- There will be three sections A, B and C in the question paper.
Section - A Objective Type/ In few words (30 words)

There will be 15 questions to be set, three from each unit and 10 to be attempted. Each question will carry 2 marks.

Section - B Short Answer Type (60 words)
There will be 5 questions to be set, 1 from each unit and all five questions to be attempted. Each question will carry 6 marks.

Section - C Long Answer / Eassy Type Question
There will be 5 questions to be set, 1 from each unit and 2 to be attempted. Each question will carry 15 marks.

Marks Scheme for - Non-practical subject –

Types of Questions	Question to be set from each Unit	Total No. of Questions	Questions to be solved	Marks assigned	Total Marks
Objective / In few words	03	15	10	02	20
Short Answer Type Questions	01	05	05	06	30
Long / Essay type of questions	01	05	02	15	30
					Total - 80

(i) Theory (Practical Subject):- There will be three sections A, B and C in the question paper.

Section - A Objective Type/ In few words (30 words)

There will be 15 questions to be set, three from each unit and 10 to be attempted. Each question will carry 2 marks.

Section - B Short Answer Type (60 words)

There will be 5 questions to be set, 1 from each unit and all five questions to be attempted. Each question will carry 4 marks.

Section - C Long Answer / Eassy Type Question

There will be 5 questions to be set, 1 from each unit and 2 to be attempted. Each question will carry 10 marks.

Marks Scheme for - Practical Subject –

Types of Questions	Question to be set from each Unit	Total No. of Questions	Questions to be solved	Marks assigned	Total Marks
Objective / In few words	03	15	10	02	20
Short Answer Type Questions	01	05	05	04	20
Long / Essay type of questions	01	05	02	10	20
					Total - 60

For question papers of compulsory papers of General group subjects i.e. Environmental Studies, English Language, Hindi Language and Skill Based Course, the pattern of question shall be applicable as suggested by the concerned Board of Studies.

(ii) Practical

	Each Practical
Laboratory Note Book / Project	10
Vive voce	10
Lab work / Field work	30
	Total - 50

(e) In odd semester examination, a candidate shall appear in papers of odd semester(s) only. Similarly in even semester examinations, a candidate shall appear in papers of even semester(s) only. Papers of odd and even semesters shall not be confined in one examination.

(f) Minimum passing marks for external/ semester end theory and practical shall be 34%.

(g) There shall be provision of 3 grace marks and it would be distributed in maximum two theory Papers / Practical.

Internal Assessment

- Internal Tests are compulsory for theory papers and must be held as per following calendar:-

Odd Semesters 1st Test - August, 2nd Test - October and 01 Assignment (during semester)

Even Semesters 1st Test - February, 2nd Test - March and 01 Assignment (during semester)

- Each test & Assignment will be of 20 marks for the subjects without practical & 15 marks for the subjects having practicals. Average of the marks obtained in the best of two tests & assignment shall be incorporated as the final marks. Qualifying marks is 40%.
- If a candidate failed to attend the test on bonafide grounds, one special test may be arranged on the production of relevant documents, before submission of application forms and fees to the office.
- The Unit tests/Assignment marks to be sent to the examination cell of the college as per notification to be issued by the Principal/ Controller Examination from time to time.
- If a candidate (whose status is Regular / Ex/Supplementary) failed in First Year of the current session (2013-14) of annual system will be appeared in the first semester examination as ex-student with under the rules and regulations of Semester System. Number of Internal Test of passed year (2013-14) will not be incorporated or carried forward.

	Non Practical Subject		Practical Subject	
	External	Internal	External	Internal
MAX MARKS	80	20	60	15
MIN MARKS	28	08	21	06

Eligibility criteria for appearing in the examinations

(i) A candidate should have 75% of attendance both in theory and practical classes. 65% attendance may be considered only on special circumstances and on certification by the Principal of the college.

(ii) A candidate shall have to qualify in the internal tests securing at least 40% marks.

(iii) A candidate shall be allowed to appear in those papers only in which she has secured qualifying marks in internal test.

(iv) If a candidate after taking admission in 1st semester could not continue the classes or could not obtain eligibility cannot appear in the 1st semester examinations. In such cases the student will not be allowed to continue in second semester and she has to continue the classes and obtain eligibility in 1st semester again in next academic year as ex-student.

11. Lecture Periods /Classes

There shall be a minimum of 50-60 hours Classes for each theory papers in respective course. Minimum of 50-60 hours shall be for each practical paper. This shall be strictly adhered to.

12. Other Guidelines

(i) There will be no provision for Revaluation, Supplementry or Betterment (Division Improvement).

(ii) A candidate has to clear all the papers within 12 semesters (six years) from the year of first admission in the programme.

(iii) A candidate will choose Honours subject just before the start of third semester from any one of the three elective subjects /group selected by her in the first semester. A candidate can change the Honours subject within 15 days from the date of admission in the third semester.

(iv) The system of credit of ten point scale examination marks in the final mark sheet shall be introduced only after its formal approval by the competent authorities.

(v) The system of Choice based credit system and Gradation system shall be introduced only after its formal approval by the competent authorities.

For Honours Degree Course (Total Marks: 2800).

13. Admission -

The process of admission in Honours Degree Course will be as follows -

(i) Student shall select course (Pass Course / Honours Degree Course) at the time of first admission in the college.

(ii) Admission shall be on merit basis after receiving the application from students.

(iii) Number of seats for Honours Degree Course will be decided as per the Govt. Rules.

(A) Each theory Paper (Non Practical Subject)

Each Theory Paper		*Internal Assessment*	
Full Marks	Minimum Passing 34%	Full Marks	Minimum Marks 40%
80	**28**	**20**	**08**

(B) Each theory Paper (Practical Subject)

Each Theory Paper		*Internal Assessment*	
Full Marks	Minimum Passing 34%	Full Marks	Minimum Marks 40%
60	**21**	**15**	**06**

(C) Each Practical Paper

Minimum Passing Percentage	*Full Marks*	*Minimum Passing Marks*
34%	**50**	**17**

(D) Grace Marks

Total/Maximum 03 in two theory paper/practical.

Amendments in Promotion Rules for Semester System at the Graduation Level

(a) A Candidate is eligible to continue the second semester classes immediately after the 1st Semester examinations and can appear in the 2nd semester examinations notwithstanding the number of arrear papers in 1st semester provided she must have appeared in the 1st semester examination.

(b) A candidate will be promoted to 3rd semester with not more than two papers of 1st semester and she will continue to attend classes of 3rd semester provisionally. She will be allowed to get final admission in the 3rd semester with maximum of four back papers in all 1st semester and 2nd semester.

(c) A Candidate is eligible to continue the 4th semester classes immediately after 3rd semester examination and can appear in the 4th semester examination with maximum 2 back papers in 1st semester and/or any numbers of back papers in 2nd and 3rd semester.

(d) A candidate will be promoted in 5th semester with not more than 2 back papers in 3rd semester and not more than 4 back papers in all 3rd and 4th semeser provided she has cleared 1st and 2nd semester examination.

(e) A candidate is eligible to continue the 6th semester immediately after the 5th semester examination and can appear in 6th semester examination with maximum of 2 back papers in 3rd semester and/or any number of back papers in 4th and 5th semester examination.

(f) If a Candidate of 6th Semester is passed in all the semesters except the 5th Semester with back in only one subject, she is allowed to appear in the back paper of the 5th Semester with the examination of 6th Semester.

(g) The students at the UG Level can view their valued answer copies and apply for the **Challenged Valuation** within 03 days from the date of the declaration of the result.

(h) A candidate will be eligible to get Graduation and Graduation Honours degree after passing all the six semester examination. For cleaning all semester papers a candidate will be given a period 6 years (12 semesters) from the year of first admission.

सेमेस्टर स्नातक स्तर प्रमोशन नियम

प्रथम सेमेस्टर में प्रवेश की पात्रता:-

- प्रथम सेमेस्टर में छात्राओं का प्रवेश छ.ग. शासन के प्रवेश नियम के आधार पर किया जावेगा।

द्वितीय सेमेस्टर में प्रवेश की पात्रता:-

- विद्यार्थी को प्रथम सेमेस्टर की परीक्षा के तत्काल बाद कितने भी विषयों में बैक के साथ द्वितीय सेमेस्टर में अध्ययन की पात्रता होगी, बशर्ते वह प्रथम सेमेस्टर की परीक्षा में शामिल हुआ हो।

तृतीय सेमेस्टर में प्रवेश की पात्रता:-

- प्रथम सेमेस्टर में 02 से अधिक विषयों में बैक नही होना चाहिए।
- प्रथम एवं द्वितीय सेमेस्टर में सम्मिलित रूप से 04 विषयों से अधिक में बैक न हो।

चतुर्थ सेमेस्टर में प्रवेश की पात्रता:-

- प्रथम सेमेस्टर में 02 से अधिक विषयों में बैक नही होना चाहिए।
- द्वितीय एवं तृतीय सेमेस्टर में कितने भी विषयों में बैक हो।

पंचम सेमेस्टर में प्रवेश की पात्रता:-

- प्रथम सेमेस्टर उत्तीर्ण होना चाहिए ।
- द्वितीय सेमेस्टर उत्तीर्ण होना चाहिए।
- तृतीय सेमेस्टर में 02 से अधिक विषयों में बैक न हो ।
- तृतीय एवं चतुर्थ सेमेस्टर में सम्मिलित रूप से 04 विषयों से अधिक में बैक न हो ।
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षष्ठम् सेमेस्टर में प्रवेश की पात्रता:-

- प्रथम सेमेस्टर उत्तीर्ण होना चाहिए।
- द्वितीय सेमेस्टर उत्तीर्ण होना चाहिए।
- तृतीय सेमेस्टर में 02 से अधिक विषयों में बैक न हो।
- चतुर्थ एवं पंचम सेमेस्टर में कितने भी विषयों में बैक हो।
- यदि कोई छात्रा सभी सेमेस्टर में उत्तीर्ण है एवं केवल पंचम सेमेस्टर में 01 (एक) विषय में बैक है, ऐसी छात्रा को षष्ठम् सेमेस्टर की परीक्षा के साथ परीक्षा देने का अवसर दिया जावेगा।

- विशेष -
  - ✓ मूल्यांकित उत्तर-पुस्तिकाओं के अवलोकन व Challenged Valuation की प्रक्रिया इस स्नातक स्तर सेमेस्टर परीक्षा अप्रैल-मई से लागू है। छात्राएं परीक्षा परिणाम घोषित होने की तिथि से 3 दिन के भीतर इस हेतु आवेदन प्राचार्य को दे सकती हैं ।
  - ✓ विद्यार्थी को स्नातक एवं स्नातक आर्नस की उपाधि तभी प्राप्त होगी जबकि उसनें सभी 06 सेमेस्टर की परीक्षायें उत्तीर्ण कर ली हों एवं 06 सेमेस्टर की परीक्षायें उत्तीर्ण करने हेतु उसे प्रथम प्रवेश की तिथि से लेकर 06 वर्षो की अवधि प्राप्त होगी।
  - ✓ छात्रा जिस सत्र बैक की परीक्षा में सम्मिलित होगी उसी सत्र का पाठ्यक्रम एवं परीक्षा संबंधी नियम लागू होगा।

हिन्दी साहित्य (सामान्य हिन्दी)

सत्र : 2021-22

पंचम सत्र (सेमेस्टर)

अनिवार्य प्रश्न पत्र

बी.ए. / बी.एस.सी. / बी.कॉम. / बी.एच.एस.सी.

अंक योजना पूर्णांक : 100
मुख्य परीक्षा : 80
आंतरिक मूल्यांकन : 20

इकाई – 1 (क) चोरी और प्रायश्चित (निबंध) – महात्मा गांधी

(ख) 1. कार्यालयीन भाषा 2. मीडिया की भाषा

इकाई – 2 (क) युवकों का समाज में स्थान – आचार्य नरेन्द्र देव

(ख) 1. वित्त और वाणिज्य की भाषा

2. मशीनी भाषा

इकाई – 3 (क) मातृभूमि – वायुदेवशरण अग्रवाल

(ख) 1. संज्ञा 2. सर्वनाम 3. विशेषण

(ग) समाचार लेखन (रिपोर्टिंग) समाचार के प्रकार, समाचार लेखन के महत्वपूर्ण अंग।

इकाई – 4 (क) डॉ. खूबचंद बघेल – हरि ठाकुर

(ख) 1. समास 2. संधि

इकाई – 5 (क) संभाषण कुशलता – माधवराव सप्रे

(ख) 1. अंग्रेजी से हिन्दी अनुवाद 2. संक्षिप्तियां

पाठ्यक्रम का औचित्य – विद्यार्थी चर्चित एवं प्रसिद्ध व्यक्तियों के लेखों के माध्यम से समाज एवं राष्ट्रहित के साथ–साथ व्यक्तित्व का विकास विषयक मुद्दों से परिचत हो सके तथा व्याकरणिक एवं भाषा विषयक प्रस्तावित पाठ्यक्रम के माध्यम से हिन्दी भाषा संबंधी प्रयोग पक्ष से परिचित होते हुए प्रतियोगी परीक्षाओं की दृष्टि से ज्ञानार्जन कर सके।

अंक–विभाजन

खण्ड	प्रश्न का प्रकार	विवरण	शब्द सीमा	चयन प्रश्न संख्या	प्रत्येक में अंक	कुल अंक
प्रथम	अतिलघुउत्तरीय / वस्तुनिष्ठ प्रश्न	प्रत्येक इकाई से प्रश्न चुने जाने है।	–	06	02	12
द्वितीय	लघुत्तरीय प्रश्न	प्रत्येक इकाई से कम से कम 07 प्रश्न पूछे जाएंगे, (व्याख्या करना भी है) जिसमें से कोई 04 प्रश्न चयन किए जायेंगें।	60	04	05	20
तृतीय	दीर्घउत्तरीय प्रश्न	प्रत्येक इकाई स, कम से कम 07 प्रश्न पूछे जायेंगें, जिसमें से कोई 04 प्रश्न चयन किए जायेंगें ।	नहीं	04	12	48
						80
अंक जोड़						20
आंतरिक मूल्यांकन						100
कुल अंक						

NEW CURRICULUM OF B.Sc.CHEMISTRY

SEMESTER V (2021-22)

Choice Based Elective paper-I

SYNTHETIC ORGANIC CHEMISTRY

MM-60 ; HOURS-45; CREDIT -3

The new curriculum will comprise of one theory paper OF 60 marks in each semester and practical work of 50 mark per year. The curriculum is as per the UGC norms & conforming to the directives of the Govt. of Chhattisgarh

UNIT I :POLYMER **Hrs-9**

Classification of polymer, Basic concept, Monomers, Various structure of copolymer (linear branched and cross linked copolymers) Polymerisation reactions Addition or chain growth polymerization Mechanism of cationic ,anionic and . Free radical polymerization, Ziegler-Natta polymerization . Condensation or step growth polymerization.

UNIT II:(A)ORGANIC POLYMER **Hrs-9**

Preparation and uses of Polythene , Polyvinyl chloride ,Polyesters, polyamides, phenol-formaldehyde resins, urea formaldehyde resins, epoxy resins and polyurethanes. Natural and synthetic rubbers.-Buna- S ,Chloroprene and Neoprene ; Vulcanization.

(B)INORGANIC POLYMER

Silicones and phosphazenes as examples of inorganic polymers, nature of bonding in tri-phosphazenes.

UNIT-III :SYNTHETIC DRUGS:- **Hrs-9**

Introduction & Classification of drugs, synthesis and uses of following classes of drugs Sulphadrugs :sulphanilamide, sulphadizine

AntipyreticandAnalgesic- paracetamol, Aspirin

Antimalarial-chloroquine, Pamaquine

Antiseptic -Chloramine, iodoform

11-9-21

IT-IV SYNTHETIC DYES –I **Hrs-9**

oduction, nomenclature and classification according to chemical constitution and application, lourand chemical constitution:- relation between colour and constitution- Witt's theory, nstrong theory, modern theories- V.B.T., M.O.T.

IIT-V **Hrs-9**

YNTHETIC DYES-II-

nthesis and uses of following class of dyes:- Azo dyes (methyl orange, methyl red, Congo d),triphenyl methane dyes- (malachite green, pararosaniline' Crystal violet), Thalein dyes henolphthalein), xanthenes dyes(Fluorescein,rhodamine), Anthraquinone (Alizarine), Indigoids ndigotin)

eference Books:

- T. W. Graham Solomons: *Organic Chemistry, John Wiley and Sons.*
- Peter Sykes: *A Guide Book to Mechanism in Organic Chemistry,* Orient
- Longman.AN
- I.L. Finar:*Organic Chemistry* (Vol. I & II), E. L. B. S.
- R. T. Morrison & R. N. Boyd: *Organic Chemistry*, Prentice Hall.
- Arun Bahl and B. S. Bahl: *Advanced Organic Chemistry,* S. Chand.
- G. M. Barrow:*Physical Chemistry* Tata McGraw---Hill (2007).
- G. W. Castellan:*Physical Chemistry* 4th Edn. Narosa (2004).
- J. C. Kotz, P. M. Treichel& J. R. Townsend: *General Chemistry* Cengage Lening
- India Pvt. Ltd., New Delhi (2009).
- B. H. Mahan:*University Chemistry* 3rd Ed. Narosa (1998).
- R. H. Petrucci: *General Chemistry* 5th Ed. Macmillan Publishing Co.: New York

5

NEW CURRICULUM OF B.Sc. CHEMISTRY

SEMESTER V(2021-22)

Choice Based Elective (CBE) paper-II

Selected Topics in Chemistry

MM60; HOURS-45; CREDIT -3

INIT I :Organometallic Chemistry **Hrs-9**

lefinition, nomenclature and classification of organometalliccompounds.Preparation-roperties, bonding and applications of alkyls and aryls of Li, Al, Hg,Sn&Ti.A brief account of ıetal- ethyleniccomplexes and homogeneous hydrogenation, mononuclear carbonyls and ature of bonding in metal carbonyls.

JNIT- II :Bio-inorganic Chemistry **Hrs-9**

:ssential and trace elements biological processes, metalloporphyrinswith specialreference to ıemoglobin and myoglobin. Biological role of alkali and alkaline earth metals with special eference to Ca^{2+}, nitrogen fixation.

JNIT-III A- Amino Acids & Peptides **Hrs-9**

I-Classification,Structure and stereochemistry of amino acids. Acid base behavior isoelectric oint and electrophoresis, Preparation and reaction of α-amino acids
2-Structure and nomenclature of peptides Classical peptides synthesis, solid-phase peptide synthesis.

3- Proteins and Nucleic acids

Classification and structure of protein levels of proteins structure, protein denaturation renaturation, constituents of amino acids Ribonucleosides andRibonucleotides, double helical structure of DNA.

UNIT-IV (A) Physical Properties and Molecular Structure **Hrs-9**

Polarisation of molecules (Classius-Mossottiequation), orientation of dipole in an electric field, dipole moment, induced dipole moment, measurement of dipole moment- temperature method and refractivity method, dipole moment and structure of molecules.

(B)Magnetic properties-

Paramagnetism, diamagnetism and ferromagnetism , determination of magnetic susceptibility, elucidation of molecular structure.

UNIT-V **Hrs-9**

(A)Raman Spectra : Concept of polarizability, quantum theory of Raman spectra, stokes and antistokes lines, pure rotational and vibrational Raman spectra. Application of Raman spectra.

(B)Photochemistry

Interaction of radiation with matter, difference between thermal and photo-chemical processes, Laws of photochemistry :Grothus-Drapper law, Stark-Einstein law, Jablonski diagram depicting various processes occurring in the exited state, qualitative description of fluorescence, phosphorescence, non-radiative processes (internal conversion, intersystem crossing), quantum yield, photosensitized reactions- energy transfer processes (simple examples).

***REFERENCEBOOKS*:**

- .Basic inorganic chemistry; F.A. Cotton; G. Willkinson and P. I. Gaus, J.wiley.
- Concise inorganic chemistry; J. D. Lee, ELBS.
- Concepts of Models of Inorganic Chemistry;B. Douglas, D. Medaniel and J. Alexander. J. Wiley.
- Inorganic Chemistry;D.E.Shrver, P. W. Atkins and C. H. Langford, oxford.
- Inorganic chemistry ; W.W. Porterfield, Addison-wesley.
- Inorganic chemistry ; A.G. Sharp, ELBS.
- Inorganic chemistry; G. L.Miessler and D. A. Tarr, Prentice Hall.
- Advcence inorganic chemistry; SatyaPrakash.
- Advance inorganic chemistry; Agrawal&Agrawal.
- Advance inorganic chemistry ;Puri& Sharma , S. Naginchand.
- Inorganic chemistry ;Madan , S. Chand.
- Selected topics in inorganic chemistry ;madanmalik&tuli ,S. Chand.
- Organic Chemistry ; Morrison and Boyd, Prentice Hall.
- Organic Chemistry; L. G.WADE,Prentice Hall.
- Fundamental of Organic Chemistry; Solomons ,J. Wiley.
- Organic Chemistry, Vol. I,II, &III; Mukharjee, Singh &Kapoor, Wiley Estern (New Age).
- Organic Chemistry ; F.A. Carey McGraw Hill.
- Organic Chemistry ;P.L.Soni
- Organic Chemistry; Bahal&Bahal.

- Physical Chemistry; G. M. Barrow, McGraw Hill.
- University General Chemistry; C. N. Rao. Macmillan.
- Physical Chemistry; R. A. Alberty, Wiley Estern.
- The Element of Physical Chemistry; P. W. Atkin, Oxford
- Physical chemistry through problems;Droga&Droga,WileyEstern.
- Physical Chemistry B.D. Khosla.
- Physical Chemistry ;Puri&Sharma.
- BhautikRasayan ; P. L. Soni.
- BhautikRasayan; Bahal&Tuli.
- Physical Chemistry; K.L. Kapoor, Vol. I-I4

NEW CURRICULUM OF B.Sc. CHEMISTRY

SEMESTER V(2021-22)

Choice Based Elective (CBE) Paper- III

ANALYTICAL CHEMISTRY

MM60; HOURS-45; CREDIT -3

UNIT I:Hrs- 9

A.Error in chemical analysis

Accuracy, precision, Types of error-absolute and relative error, methods of eliminating or minimizing errors. Methods of expressing precision: mean, median, deviation, average deviation and coefficient of variation. Significant figures and its application.

B. Chromatography

Principle of adsorption and partition chromatography. Column chromatography: adsorbents, classification of adsorbents, solvents, preparation of column, adsorption andapplications. Thin Layer Chromatography: choice of adsorbent, choice of solvent, preparation of chromatogram, sample, Rf value and its applications. Paper chromatography,solvent used, Rf value, factors which affect Rf value. Ion exchange chromatography, resins used, experimental techniques, applications.

UNIT II:Hrs- 9

Analysis of Water

Analysis of parameter :colour, turbidity, total solids, conductivity, acidity, alkalinity, hardness , choride, sulphate, fluoride, silica, phosphates and different forms of nitrogen. Measurements of DO, BOD and COD. Pesticides as water pollutants and analysis. Water pollution laws and standards. . Water treatment and purification

UNIT III : TITRIMETRIC METHODS OF ANALYSIS

Hrs-9

A. General Introduction

General principle. Types of titrations. Requirements for titrimetric analysis. Concentration systems. Primary and secondary standards, criteria for primary standards, preparation of standard solutions, standardization of solutions. Limitation of volumetric analysis end point and equivalence point.

B.Titrimetric Analysis

1- Acid Base Titration-theory of indicators, choice of indicators. Use of phenolphthalein and methyl orange.

2-Redox Titration -Principle of redox tritimetricestimation based on the use of the following reagents: $KMnO_4$, $K_2Cr_2O_7$, I_2 ,$Na_2S_2O_3.5H_2O$

3-Complexometric titrations

Titration involving EDTA. Metal ion indicators and characteristics.

UNIT IV: SOLUBILITY EQUILIBRIA

Hrs- 9

A- General Separation Techniques

Solubility and solubility products, expressions for solubility products. Determination of solubility from solubility products.

B- Gravimetric methods of analysis.

Requirements of gravimetry: properties of precipitates and precipitating regents, particle size and filterability of precipitates, colloidal and crystalline precipitates coprecipitation and post-precipitation drying and ignition of precipitates, principles of gravimetric estimation of chloride, phosphate, zinc, iron, aluminum and magnesium singly.

Unit V: Electro analytical methods:

Hrs- 9

A-Classification of electroanalytical methods,

B-basic principle of pH metric, potentiometric and conductometric titrations.

C- Principle of spectrophotometric estimation

Reference Books

1. D.A. Skoog, D.M. West and F.J. Holler, *Analytical Chemistry: An Introduction*, 5th edition, Saunders college publishing, Philadelphia, 1990.
2. U.N. Dash, *Analytical Chemistry: Theory and Practice*, Sultan Chand and sons Educational Publishers, New Delhi, 1995.
3. R.A. Day Jr. A.L. Underwood, *Quantitatives Analysis*, 5th edition, Prentice Hall of India Private Ltd., New Delhi, 1988.
4. R. Gopalan, *Analytical Chemistry*, S. Chand and Co., New Delhi

Core Course -CCB – 05

[*Anatomy, Embryology and Economic Botany*]

(Credits: Theory-3, Practicals-2)

THEORY: Lectures – 45 Hours / 68-70 Periods

Unit 1: Tissue, Organ and Apex organization (09Hours/14 Periods)

Meristematic and Permanent - Simple and complex tissues. Internal Structure of dicot and monocot root stem and leaf.Root and shoot apex organization (different theories); Special tissues.General account of adaptations in xerophytes and hydrophytes.

U nit 2: Secondary Growth andprotective systems (09 Hours/14 Periods)

Vascular cambium – structure and function, seasonal activity. Secondary growth in root and stem, Periderm; Wood (heartwood and sapwood). Annual ring; Epidermis, cuticle, stomata; Abnormal Sec. Growth (Achyranthus, Nyctanthus, Boerhavia, Bougainvillea and Dracaena).

Unit 3:Flower, Pollination and fertilization (09 Hours/14 Periods)

Structure of anther and pollen; Structure and types of ovules; differenttypes of embryo sacs, organization of mature typical embryo sac.Pollination mechanisms and adaptations; Self Incompatibility; Fertilization and Double fertilization; Endosperm types, structure and functions;

U nit 4: Embryogenesis, Apomixes and Polyembryony(09 Hours/14 Periods)

Development of embryo -Dicot and monocot embryo;Apomixes - Definition, types.causes and practical applications.Polyembryony – concept, types, causes and practical applications Seed-structure appendages and dispersal mechanisms.

Unit 5: Economic botany (09 Hours/14 Periods)

Cultivation and economic importance of popular cereals (Paddy, wheat, Maize, Barley and Jwar etc.), Pulses (Pea, Gram, Arhar, Moong, Lathyrus etc.), Vegetables (Potato, Brinjal, Tomato, Bitter Gourd, Bottle Gourds etc) and spices (Turmeric, Ginger, Onion, Garlic, Coriander, Cardamom, Clove etc.) Plants of Chhattisgarh state. Important timber yielding plants. Common medicinal plants (Amla, Aloe, Adhathoda, Buchh, Sarpgandha,Tulsi etc.)used in thisregion.

Practical: Lab work (2 Credits=30 Hours /45 Periods)

Suggested Readings

1. Bhojwani, S.S. &Bhatnagar, S.P. (2011). Embryology of Angiosperms. VikasPublication House Pvt. Ltd. New Delhi. 5th edition.
2. Mauseth, J.D. (1988). Plant Anatomy. The Benjamin/Cummings Publisher, USA.
3. Pandey, B. P. (LatesEdt.). Plant Anatomy

Signature of Convener & Members, Board of Studies:

09.10.2021

10

Govt. Bilasa Girls P.G. College Bilaspur (C.G.)

Session 2021-2022
B.Sc. Semester V
SUBJECT ZOOLOGY
Paper (Pass Course)

Max. Marks
Min. Pass Mark

VERTEBRATE ENDOCRINOLOGY, REPRODUCTIVE BIOLOGY, BEHAVIOR, TOXICOLOGY & MICROBIOLOGY AND MEDICAL ZOOLOGY

UNIT-I

1. Endocrine glands –Classification and histology.
2. General Characters of Hormones.
3. Hormone receptor.
4. Biosynthesis and secretion of thyroid, Adrenal, Ovarian and testicular hormones.
5. Endocrine disorder due to hormones of the other gland.

UNIT- II

1. Reproductive cycle in vertebrate.
2. Menstruation, Lactation and Pregnancy.
3. Mechanism of parturition.
4. Hormonal regulation of Gametogenesis.
5. Extra embryonic membrane.

UNIT-III

1. Introduction to Ethology.
2. Patterns of Behavior Taxis, Reflexes, Drives and Stereotypes Behavior.
3. Reproductive Behavioral Patterns.
4. Hormones, Drugs and Behavior.

UNIT-IV Toxicology and Microbiology

1. Definition of Toxicity, Principle of systematic toxicology.
2. Classification of toxicants.
3. Toxic agents and their action-metallic and inorganic agents.
4. Animal poisons –Snake venom, Scorpion and bee poisoning.
5. Food poisoning.
6. General and Applied microbiology.
7. Microbiology of Domestic water and sewage.
8. Microbiology of milk and products.

UNIT-V Medical microbiology

1. Brief introduction to pathogenic microbes-viruses, Rickettsia, Spirochaetesand Bacteria.
2. Brief account of life History, pathogenicity of the following pathogens with reference to man; prophylaxis and treatment.
   (a) Pathogenic Protozoan- Entamoeba ,Trypanosoma and Giardia .
   (b) Pathogenic helminthes – Schistosoma Nematode pathogenic parasites of man
3. Vector insects.

16/9/21

16.9.21

SUGGESTED READINGS

1. Austin, C.R. and Short, R.V. reproduction in Mammals. Cambridge University Press.
2. Degroot, L.J. and Jameson, J.L. (eds). Endocrinology. W.B. Saunders and Company.
3. Knobil, E. et al. (eds). The Physiology of Reproduction. Raven Press Ltd.
4. Hatcher, R.A. et al. The Essentials of Contraceptive Technology. Population Information Programme.
5. David McFarland, *Animal Behaviour*, Pitman Publishing Limited, London, UK.
6. Manning, A. and Dawkins, M. S, *An Introduction to Animal Behaviour*, Cambridge University Press, UK.
7. John Alcock, *Animal Behaviour,* Sinauer Associate Inc., USA.
8. Paul W. Sherman and John Alcock, *Exploring Animal Behaviour,* Sinauer Associate Inc., Massachusetts, USA.

PRACTICAL

1. Examination of histological sections from photomicrographs/ permanent slides of rat/human: testis, epididymis and accessory glands of male reproductive systems; Sections of ovary, fallopian tube, uterus (proliferative and secretory stages), cervix and vagina.
2. Study of permanent slides of endocrine glands of mammals.

PRACTICAL

1. To study different types of animal behaviour such as habituation, social life, courtship behaviour in insects, and parental care from short videos/movies and prepare a short report.
2. To study nests and nesting habits of the birds and social insects.
3. To study geotaxis behaviour in earthworm.
4. To study the phototaxisbehaviour in insect larvae.
5. Visit to Forest/ Wild life Sanctuary/Biodiversity Park/Zoological Park to study behavioural activities of animals and prepare a short report.

PRACTICAL

1.Detection of gram positive and gram negative bacteria.
2.Study of permanent slides of parasites based on theory paper.

B.Sc. (Food Science & Quality Control)
SEMESTER-V

FOOD ANALYSIS AND FOOD TOXICOLOGY

MARKS-60

UNIT - I

1. Food composition and factor affecting - Carbohydrate, Protein, Fats and oils natural emulsifiers. Organic acid, oxidant, antoxidant, enzyme, Pigment and colour, flavour, vitamins & minerals natural toxicants & water.
2. Sampling techniques - Preparation of sample physical method, lactometer refractometry, polymetry, viscosity, surface tension.

UNIT - II

3. General chemical method of anylisis.
   a) Total carbohydrate mono,di, saccharide starch and gum, fiber and dietary fiber
   b) Total fat and different types of lipids.
   c) Total protein, non- protein and specific protein.
   d) Macro & micro elements-Na, K, P, Ca, Mg, Fe, Zn, Vitamin.

UNIT - III

1. Toxicology - Introduction, Importance and Scope
2. a) Food Contamination
   b) Naturally occurring toxin in various food substance animal and plant food.
   c) Substance interminably added to food.
   d) Antioxidant, colors, stabilizers.
3. a) Residual chemicals utilized in food product and processing.
   b) Chemical preservatives.
   c) Pesticides
   d) Heavy Metal's
   e) Hormones In foods

UNIT - IV

1. Food born illness - microbial & parasites food poisoning.
2. Bacterial Interaction - Staphylococcal, Botulism.
3. Bacterial infection's - salmonellas, E-coli infection.
4. Parasites - Trichinosis, Tapeworm.

UNIT - V

5. Physical treatment of food preservatives-
   a) Ir-radiation
   b) Application of irradiation in food preservatives
   c) effects of irradiation
6. a) carcinogens - definition and classification
   b) Dietary factors
7. Genetically engineered food definition, Application of General technical safet

B.SC. Clinical Nutrition / B.Sc (H.Sc.)/ B.Sc. Food and Quality Control

SEMESTER-V

RENO NUTRITION

Marks-60

1. Structures and Function of Human Kidneys- Nephron-bowman's Capsule, Juxtaglomerular Apparatus, Urinary Tubules.
2. The Process of urine formation- filtration effective filtration Pressure, tubular secretion, selective re-absorption and formation of new substance. Composition of Urine, reaction of urine, Glycosuria, albuminuria, ketoneuria, mituncon and its nervous, control.
3. Control of osmolality and sodium concentration in urine.
4. Renal regulation of calcium, potassium, magnesium and phosphorus.
5. Renal disorders- acute and chornic glomerulaonephritis- etiopathology, symptoms complication, medicinal nutritional treatment.
6. Nephrotic syndrome- etiopathology, symptoms complication, medicinal nutritional treatment.
7. Acute and chronic renal failure- eptiopathology, symptoms, complication, medicinal and nutritional treatment-dialysis, peritoneal, food to be given and avoided
8. Nephrolithiasis-etiopathology, symptoms complication, medicinal nutritional treatment, food to be given.
9. Renal cancer- etiopathology, symptoms complication, medicinal nutritional treatment.
10. Renal Transplant- factors to be considered while transplantation- symptom, Complication, and transplant rejection.

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NEW CURRICULUM OF B.Sc.CHEMISTRY

SEMESTER VI (2021-22)

MM-60 : HOURS -45; CREDIT -3

The new curriculum will comprise of one theory paper of 60 marks in each semester and practical work of 50 mark per year. The curriculum is as per the UGC norms & conforming to the directives of the Govt. of Chhattisgarh

UNIT I -(A): Metal-Ligand Bonding in Transition Metal Complexes **Hrs-9**

Limitations of valence bond theory, an elementary idea of crystal field theory, crystal field splitting in octahedral, tetrahedral and square planar complexes, factors affecting the crystal field parameters.

(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.

(C)Electronic Spectra of Transition Metal Complexes

Types of electronic transitions, selection rules for *d-d* transitions, spectroscopic ground states, spectrochemical series. Orgel-energy level diagram for d^1 - d^9 states, discussion of the electronic spectrum of $[Ti(H_2O)_6]^{3+}$ complex ion.

UNIT II :(A)Organosulphur compounds: **Hrs -9**

Nomenclature, structural features, methods of formation and chemical reactions Ofthiol, thioethers, sulphonic acids, sulphonamides and sulphaguanidine.

(B)Organic Synthesis via Enolates:

Activemethylene group, alkylation of diethyl malonate and ethyl acetoacetate. Synthesis of ethyl acetoacetate: the Claisen condensation. Keto-enoltautomerism of ethyl acetoacetate.

11.9.21

(C)Carbohydrates:

Configuration of monosaccharides.Erythro and threodiastereomers.Formationofglycosides, ethers and esters.Determination of ring size of monosaccharides. Cyclic structure of D(+)-glucose..structureofribose and deoxyribose. An introduction to disaccharides (maltose, sucrose and lactose) and polysaccharides (starch and cellulose) without involving structure determination.

UNIT III : Fundamentals of Spectroscopy **Hrs-9**

A.Introduction; characterization of electromagnetic radiation, regions of the spectrum, representation of spectra width and intensity of spectral transition, rotational spectra of calculated diatomic molecules, Energy levels of a rigid rotator, selection rules, , determination of bond length, qualitative description of non-rigid rotator, isotope effect.

B. Vibrational spectrum –Fundamental Vibrating diatomic molecules Energy levels of simple harmonic oscillator, selection rules, pure vibrational spectrum, determination of force constant, diatomic vibrating operator, An harmonic oscillator.

C. Electronic Spectrum-electronic spectra of diatomic molecules,

Franck-Condon Principle, types of electronic transitions, application of electronic spectra.

UNIT IV: Spectroscopy of organic molecules **Hrs-9**

(A)UV- Visible spectroscopy :Beers-Lamberts law, effect of conjugation λmax,Woodward fieser rule for calculating λ max of conjugated polyenes and carbonyl compounds

(B)Infra red spectroscopy: IR absorption band & their position and intensity,types of

Bending and stretching of molecules

(C)NMR Spectroscopy: Introduction to NMR, shielding and number of signal PMR, shielding deshielding effect , chemical shift and characteristic values, splitting of signals and coupling constants, tau & delta scale

UNIT V: Quantum Mechanics **Hrs-9**

Black body radiation, Plank's radiation law, photoelectric effect, Compton effect. de Broglie`s idea of matter waves, experimental verification., Heisenberg's uncertainty principle, Sinusoidal wave equation, Operators Hamiltonian operator,angular momentum operator, laplacianoperators ,postulate of quantum mechanics. Eigen values, Eigen function. Schrodinger's time independent, physical significance of ψand ψ^2.application of Schrodingerwave equation , particle in a one dimensional box.Hydrogen atom (separation into three variables) radial wave function andangular wave function.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 anti bonding

wave functions .Concept of σ- σ*, π- π* orbitals and their characteristics, Hybrid orbitals-*sp*, sp^2, sp^3.

REFERENCE BOOKS:

- Physical Chemistry; G. M. Barrow, McGraw Hill.
- University General Chemistry; C. N. Rao. Macmillan.
- Physical Chemistry; R. A. Alberty, Wiley Estern.
- The Element of Physical Chemistry; P. W. Atkin, Oxford
- Physical chemistry through problems;Droga&Droga,WileyEstern.
- Physical Chemistry B.D. Khosla.
- Physical Chemistry ;Puri&Sharma.
- Bhautik Rasayan ; P. L. Soni.
- Bhautik Rasayan; Bahal&Tuli.
- Physical Chemistry; R.L. Kapoor,Vol. I-IV.
- Bautik Rasayan; Puri &Sharma

NEW CURRICULUM OF B.Sc.CHEMISTRY

SEMESTER V&VI

(2021-22) MM50; HOURS-60; CREDIT-4

Laboratory Course

GRAVIMETRIC ANALYSIS:

Analysis of Cu as CuSCN or CuO, Ni as Ni $(DMG)_2$, Ba as $BaSO_4$ and Fe as Fe_2O_3.

ORGANIC CHEMISTRY

(A)Qualitative analysis:

Analysis of an organic mixture containing two solid components using water, $NaHCO_3$,

NaOH for separation and preparation of suitable derivatives.

PHYSICAL CHEMISTRY

Electrochemistry:

(i) To determine the strength of the given acid conductometrically using standard alkali solution.
(ii) To determined the solubility and solubility product of sparingly soluble electrolyte by conductometrically.
(iii) To study the saponification of ethyl acetate conductometrically.
(iv) To determine the ionization costant of weak acid conductometrically.

(v) To titrate potentiometrically the given solution of ferrous ammonium sulphate with $KMnO_4/K_2Cr_2O_7$as titrant and calculate the redox potential of Fe^{++} / Fe^{+++} system on hydrogen scale.

Refractrometry and polarimetry:

(i) To verify law of refraction of mixture (glycerol and water) using Abbe`s refractometer.
(ii) To determine the specific rotation of a given optically active compounds.

Molecular weight determination:

(i) Determination of molecular weight 'of a non-volatile solute by Rast methods/ Backmann freezing point method.
(ii) Determination of the apparent degree of dissociation of an electrolyte (e. g. NaCl) in aqueous solution at different concentration by ebullioscopy.

Colorimetry :

To verify Beer-Lambert law for $KMnO_4$ / $K_2Cr_2O_7$and determine the concentration of the given solution of the substance.

LABORATORY COURSE - CBE -I

(SYNTHETICORGANIC CHEMISTRY)

Synthesis of organic compounds:

1. Acetylation of salicylic acid, aniline, glucose and hydroquinone. Benzoylation of aniline and phenol.
2. Aliphatic electrophilic substitution, preparation of iodoform from ethanol and acetone.
3. Aromatic electrophilic substitution.Nitration- preparation of m-dinitro benzene and p-nitro acetanilide.Halogenations: preparation of p- bromo acetanilide and2, 4 ,6-tribromophenol.
4. Diazotization/coupling: preparation of methyl orange and methyl red.
5. Oxidation: preparation of benzoic acid from toluene.
6. Reduction: preparation of aniline from nitro benzene and m-nitroaniline from m-dinitrobenzene.
7. Synthesis of Phenolphthalein, fluorescein

LABORATORY COURSE FOR CBE-II

(Selected Topics in Chemistry)

Paper chromatography (ascending and circular); separation of a mixture of phenylalnine and lycine, alanine and aspartic acid,leucine and glutamic acid,spray reagent ninhydrin.separation a mixture of D, L – alanine,glycine and L-leucine using n-butanol+acetic acid + water (4:1:5) pray reagent ninhydrin.separation of monosccharides a mixture of D-glucose and-fructose sing n-butanol+acetone+ water (4:1:5)spray reagent aniline hydrogen phthalate

Separation of fluorescein/ methyl orange and methylene blue

Separation of leaf pigments from spinach

Estimation of Protein

Preparation of Ni- DMG Complex

Determination of enthalpy of neutralization of a weak acid/weak base versus strong base/strong acid l determine the enthalpy of ionization of the weak acid/ weak base.

LABORATORY COURSE - CBE -III:

(ANALYTICAL CHEMISTRY)

Determination of dissolved oxygen in water.

Determination of Chemical Oxygen Demand (COD)

Determination of Biological Oxygen Demand (BOD)

Measurement of chloride, sulphate and salinity of water sample by simple titration

ethod ($AgNO_3$ and potassium chromate).

Estimation of total alkalinity of water sample (CO_3^{-2}, HCO_3^-) using double titrationmethod.

Estimation of hardness of water sample.

To determine the solubility and solubility product of sparingly soluble electrolyte by nductometrically.

Steam distillation-Naphthalene from its suspension in water, Clove oil from cloves and paration of o- and p- nitrophenols.

Thin layer chromatography:determination of R_f values and identification of organic mpounds; separation of green leaf pigment (spinach leaves may be used), preparation and paration of 2, 4- dinitrophenylhydrazone of acetone, 2-butanone, hexan-2-and 3-one using uene and light petroleum (40:60), separation of a mixture of dyes using cyclo hexane and yl acetate (8.5:1.5).

ference Books:

- Furniss, B.S.; Hannaford, A.J.; Rogers, V.; Smith, P.W.G.; Tatchell, A.R. *Vogel's*
- *Textbook of Practical Organic Chemistry*, ELBS.
- Ahluwalia, V.K. & Aggarwal, R. *Comprehensive Practical Organic Chemistry,*
- Universities Press

- To calculate acidity/alkalinity in given sample of pesticide formulations as per
- BIS specifications.
- Preparation of simple organophosphates, phosphonates and thiophosphates
- R. Cremlyn: *Pesticides*, John Wiley.
- E. Stocchi: *Industrial Chemistry*, Vol-I, Ellis Horwood Ltd. UK.42
- R.M. Felder, R.W. Rousseau: *Elementary Principles of Chemical Processes*,
- Wiley Publishers, New Delhi.
- J. A. Kent: Riegel's *Handbook of Industrial Chemistry*, CBS Publishers, New
- Delhi.
- S. S. Dara: *A Textbook of Engineering Chemistry*, S. Chand & Company Ltd.
- New Delhi.
- K. De, *Environmental Chemistry*: New Age International Pvt., Ltd, New Delhi.
- S. M. Khopkar, *Environmental Pollution Analysis*: Wiley Eastern Ltd, New Delhi.

PRACTICAL EXAMINATION

MM -50,

08- Hrs

Four experiments to be preformed.

1.Inorganic :- Gravimetric estimation carrying 10 marks.(manipulation 03 marks).

2.Organic Qualitative analysis of organic mixture containing two solid components.

10 marks (04 marks of each compound and 02 marks for separation).

3.Physical; one physical experiment carrying 10 marks

4.One experiment from CBE lab course 06- marks

5. Sessional - 04 marks

6. Viva - 10 marks

In case of Ex-students one mark each will be added to gravimetric analysis and qualitative analysis of organic mixture and two marks in physical experiment.

Core Course -CCB – 06

[*Plant Physiology and Biotechnology*]

(Credits: Theory-3, Practicals-2)

THEORY: Lectures – 45 Hours / 68-70 Periods

Unit 1: Plant-water relations and Mineral nutrition(09 Hours/14 Periods)
Properties and Importance of water; Absorption of water; Translocation of water in plant;. Transpiration and its significance;Root pressure and guttation.Essential elements, macro and micronutrients; Role of essential elements; Translocation in phloem-Pressure flow model.

U nit 2: Enzyme concept andPhotosynthesis(09 Hours/14 Periods)
Enzyme – Structure, properties and classification; Mechanism of enzyme action, catalysis and enzyme inhibition.Photosynthetic apparatus, Photosystem I and II, Electron transport and Photophosphorylation; C_3, C_4 and CAM pathways of carbon fixation; Photorespiration.

Unit 3: Biological oxidation and Nitrogen metabolism(09 Hours/14 Periods)
Glycolysis, anaerobic respiration, TCA cycle; Oxidative phosphorylation, Glyoxylate cycle; Oxidative Pentose Phosphate Pathway. Biological nitrogen fixation; Nitrate and ammonia assimilation.

Unit 4: Plant growth regulators and response to light & temperature(09 Hours/!4 Periods)
Plant growth and Growth-hormones - Discovery and physiological roles of Auxins, Gibberellins, Cytokinins, ABA, Ethylene.Photoperiodism (SDP, LDP, Day neutral plants); Phytochrome (discovery and structure), redand far red light responses on photomorphogenesis; Vernalization.

Unit 5: Fundamentals of Biotechnology (09 Hours/14 Periods)
Biotechnology – Means, Objectives and scope. Basic concept of Tissue culture; Gene cloning, Clonig vectors, Genomic and cDNA library. Tools, techniques and application of Recombinant DNA technology.

Practical: Lab work (2 Credits=30 Hours /45 Periods)

Suggested Readings

1. Taiz, L., Zeiger, E., (2010). Plant Physiology.Sinauer Associates Inc., U.S.A. 5th Edition.
2. Hopkins, W.G., Huner, N.P., (2009). Introduction to Plant Physiology. John Wiley &Sons, U.S.A. 4th Edition.
3. Bajracharya, D., (1999). Experiments in Plant Physiology- A Laboratory Manual.Narosa Publishing House, New Delhi.

Signature of Convener & Members, Board of Studies:

Laboratory work

(B.Sc. – V & VI Semester)

[CORE COURSE – CCB- 05 & 06(Credit 2+2)]

TIME: 3 Hrs. Marks – 50

Sl. No.	Task Group	Pattern-A	Pattern-B
1	Ecological adaptations &Anatomy	05	05 + 05
2	Embryology & Utilizations of plants	05	05 + 05
3	Physiological experiment / Biotechnology	10	05 + 05
4	Project work	10	00
5	Spotting	10	10
6	Viva-voce and Sessional	05 + 05	05 + 05

Suggested Laboratory Exercises

L.S of Shoot tip to study the cyto-histological zonation and origin of leaf primordial.

Anatomy of primary and secondary growth in monocots and dicots stem using hand sections or permanent slides, structure of secondary phloem and xylem, growth rings in wood microscopic study of wood in T.S, T.L.S. and R.L.S.

Anatomy of root , primary and secondary structure .

External and Internal adaptation characteristic feature of xerophytic and hydrophytic plants.

Examination of a wind range of flowers available in the locality and methods of their pollination .

Structure of ovule and embryo sac development (using serial sections) .

Study different types of ovule and embryo sac (using permanent slides/ photographs).

Nuclear and cellular endosperm embryo development in monocots and dicots (using slides and dissections).

Study morphological structure and economic importance of cropplants mentioned in syllabus.

Field study and collection for herbarium dried specimens of crop plants mentioned in syllabus in your locality.

To study the permeability of plasma membrane using different concentration of organic solvents.

To study the effect of temperature on permeability of plasma membrane.

Determining the osmotic potential of vacuoles sap by plasmolytic method.

Determine the water potential by any tuber.

Determine the rate of transpiration of various plant parts.

Demonstration the rate of transpiration by four leaf method.

Determining the rate of transpiration by different types of photometers.

Comparison the rate of respiration of various plant parts.

Determine the rate of plant growth by different types of auxanometer.

Bioassay of auxin, cytokinin,QA,ABA and ethylene using appropriate plant material.

Determine the rate of photosynthesis of various methods.

Seperation of chloroplast pigments by solvent methods .

To study the enzyme activity of catalase and peroxides as influenced by pH and temperature.

Demonstration of the technique of micro propagation by using different explants e.g. axillary buds, shoot meristem.

Demonstration of the techniques of anther culture.

Isolation of protoplast from of different tissues using commercially available enzymes.

Demonstration of root and shoot formation from apical and basal portion of stem segments in liquid medium containing different hormones.

Determination of osmotic potential of plant cell sap by plasmolytic method.

Determination of water potential of given tissue (Potato tuber) by weight method .

Study the effect of wind velocity & light on the rate of transpiration in excised twig / leaf.

Calculation of stomatal index and stomatal frequency from the two surfaces of leaves of a mesophyte and xerophytes.

To study the effect of different concentrations of IAA or Avena coleoptile elongation.

To study the induction of amylase activity in germinating barley grains.Chemical separation of photosynthetic pigments.

To study the effect of light intensity, wind velocity on the rate of photosynthesis.Effect of Co2 on the rate of photosynthesis.

To compare the rate of respiration in different parts of a plant.

ature of Convener & Members, Board of Studies:

09.10.2021

Govt. Bilasa Girls P.G. College Bilaspur (C.G.)

Session 2021-2022
B.Sc. Semester VI
SUBJECT ZOOLOGY
Paper (Pass Course)

Max. Marks: 60
Min. Pass Marks:21

Genetics, Cell Physiology, Biochemistry, Biotechnology, Bio-techniques

UNIT –I Genetics.

1. Linkage and Linkage maps.
2. Varieties of gene expression-Multiple alleles; Lithogenesis, Pleiotropic genes, interaction of gene, epistasis.
3. Sexchromosome system and sex linkage.
4. Mutation and chromosomal alteration, meiotic consequences.
5. Human genetics-chromosomal and single gene disorders (somatic cell genetics).

UNIT-II Cell Physiology

1. General idea about pH and Buffer.
2. Transport across membranes-cell membrane, Mitochondria and Endoplasmic reticulum.
3. Active transport and its mechanism, Active transport in Mitochondria and Endoplasmic reticulum.
4. Hydrolytic enzymes-their chemical nature, Activation and specificity.

UNIT-III Biochemistry

1. Aminoacids and peptides-Basic structure and biological function.
2. Carbohydrate and its metabolism- Glycogenesis,Gluconeogenesis,Glycolysis, Glycogenolysis,Cori cycle.
3. Lipid metabolism-Oxidation of glycerol, oxidation of fatty acid.
4. Protein metabolism- Deamination, Transamination, Transethylation, Biosynthesis of Protein.

UNIT-IV Biotechnology

1. Biotechnology- Scope and Importance.
2. Recombinant DNA and Gene cloning.
3. Cloned genes and other tools of Biotechnology.
4. Applications of Biotechnology in (i) Pharmaceutical industries,(ii) Food processing industries.

UNIT-V Biotechniques

1. Principle and technique of pH meter. Colorimeter.
2. Microscopy- Light microscopes, phase contrast and electron microscopes.
3. Centrifugation
4. Separation of biomolecules by chromatography and electrophoresis.
5. Histochemical methods for determination of Protein, Lipids and Carbohydrate

SUGGESTED READINGS

1. Gardner, E.J., Simmons, M.J., Snustad, D.P. (2008). *Principles of Genetics*. VIII Edition. Wiley India.
2. Snustad, D.P., Simmons, M.J. (2009). *Principles of Genetics*. V Edition. John Wiley and Sons Inc.

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3. Klug, W.S., Cummings, M.R., Spencer, C.A. (2012). *Concepts of Genetics*. X Edition. Benjamin Cummings.
4. Russell, P. J. (2009). *Genetics- A Molecular Approach.* III Edition. Benjamin Cummings.
5. Griffiths, A.J.F., Wessler, S.R., Lewontin, R.C. and Carroll, S.B. *Introduction to Genetic Analysis*. IX Edition. W. H. Freeman and Co.
6. Cox, M.M and Nelson, D.L. (2008). *Lehninger Principles of Biochemistry*, V Edition, W.H. Freeman and Co., New York.
7. Berg, J.M., Tymoczko, J.L. and Stryer, L. (2007). *Biochemistry*, VI Edition, W.H. Freeman and Co., New York.
8. Murray, R.K., Bender, *D.A.*, Botham, K.M., Kennelly, P.J., Rodwell, V.W. and Well, P.A. (2009,). *Harper's Illustrated Biochemistry*, XXVIII Edition, International Edition, The McGraw-Hill Companies Inc.
9. Hames, B.D. and Hooper, N.M. (2000). *Instant Notes in Biochemistry*, II Edition, BIOS Scientific Publishers Ltd., U.K.
10. Brown, T.A. (1998). *Molecular Biology Labfax II: Gene Cloning and DNA Analysis*. II Edition, Academic Press, California, USA.
11. Glick, B.R. and Pasternak, J.J. (2009). *Molecular Biotechnology - Principles and Applications of Recombinant DNA*. IV Edition, ASM press, Washington, USA.
12. Griffiths, A.J.F., J.H. Miller, Suzuki, D.T., Lewontin, R.C. and Gelbart, W.M. (2009). *An Introduction to Genetic Analysis*. IX Edition. Freeman and Co., N.Y., USA.
13. Snustad, D.P. and Simmons, M.J. (2009). *Principles of Genetics.* V Edition, John Wiley and Sons Inc.
14. Watson, J.D., Myers, R.M., Caudy, A. and Witkowski, J.K. (2007). *Recombinant DNA- Genes and Genomes- A Short Course*. III Edition, Freeman and Co., N.Y., USA.
15. Beauchamp, T.I. and Childress, J.F. (2008). *Principles of Biomedical Ethics.* VI Edition, Oxford University Press.

PRACTICAL WORK

Blood group detection (A,B,AB,O).
R.B.C. count.
W.B.C. count. Blood Coagulation time.
Preparation of Haematin crystals from blood of rat.
Observation of Drosophila wild and mutant.
Chromatography – paper or gel.
Colorimetericestimationofhaemoglobin/glucose/KMnO4.
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 microscopes.

16/9/21 16.9.21

Govt. Bilasa Girls P.G. College Bilaspur (C.G.)

PRACTICAL

B.Sc. Semester V +VI

Session: 2021-22

SCHEME OF EXAMINATION

IME- 3 Hrs. M.M. 50

1.	Hematological (RBC/WBC Counting/Blood Group Detection)	05
2.	Exercise based on behavior	04
3.	Exercise based on endocrine and reproductive biology(Spotting)	06
4.	Exercise based on medical microbiology (Spotting)	08
5.	Staining of Gram+ ve and Gram- ve Bacteria/mitosis in onion root tip)	05
6.	Biochemical test of carbohydrate, protein and lipid./ Chromatography	08
7.	Working principle of pH meter/colorimeter/centrifuge/microscope	04
8.	Viva voce	05
9.	Sessional	05
	TOTAL	**50**

16/9/21

16.9.21

25

B.Sc. (Food Science & Quality Control)
SEMESTER-VI

FOOD MANUFACTURING ADULTERATION AND TESTING

M.M. - 60

UNIT - I

1.Market Research- Concept of Market type of market Scope of market research important of market research procedure of market research.
2.Consumer Research - Consumer meaning and definition Consumer responsibility consumer products. Consumer behaviour, importance of consumer research.
3.food consumption pattern and the various factor effecting this pattern economical, Social psychological and physiological.

UNIT - II

4. Trends in Social Change and its role in diet pattern,Food situation in India and outside.
5. Tapping the unconventional post harvest losses.
6. Prospects of Food processing for export traditional food status and need for renewal in the contact of westernization.
7. Product development primary processing secondary processing types of food products of quick working fast food.

UNIT - III

8. Food law's - State and municipal laws mandatory, national and international.
Role of voluntary agencies and legal aspect's of consumer protection.
Food standards - India and international.

UNIT - IV

9. Food adulteration and quality criteria for the following-milk and milk products. Flesh food grain's flours, Fruit and vegetable products. Oils and fats, spicesd and condiments. Beverages - alcoholic and non alcoholic canned food.

UNIT - V

10. Entrepreneurship plant location investment.
11. Food law's equipment and space
12. Costing of product.
13. Advertising and marketing.
14. Transportation - Type/Mode.

Twinkle

Suman

BSc –VI semester

PRCATICAL

Food Science & Quality Control

Marks-50

PRACTICALS :-

1. Estimation of Saponification Value of Fat.
2. Estimation of Iodine No. of Fat.
3. Estimation of Acid No. of Fat.
4. Estimation of Total Nitrogen by Kjehldol Method.
5. Separation of Amino Acid by Paper Chromatography.
6. Separation of Amino Acid by Paper Electrophoresis.
7. Testing of Adulteration in Milk & Milk Products, Cereal & Cereal Products, Spices, Fats & Oil.
8. Vitamin C estimation by Dye method

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Twinkle

Suman

B.Sc. VI. Sem. (Clinical Nutrition And Home Science)/ B.Sc. Food and Quality Control

DIABETO NUTRITION

Marks-60

1. Diabetes- Types-Type-1 and Type 2
2. Etipathology, Symptoms
3. Diabetos- Cardiopathy, diabeto-renopathy, diabetes-ratinopathy, diabetis-neuropathy, ketosis and other complication of the disease, diabetic come.
4. Hyperglycemic and hypoglycemic shock- types
5. Treatment- regime of the disease- hypoglycemic agents, natural and synthetic sweeteners
6. Insulin- natural and synthetic. PCR for natural production of insulin.
7. Complication of Insulin Supplementation- Hypo and Hyperinsulinemia
8. Basal Bolus- Disturbed basal bolus in Diabetics
9. Importance of Glycemic index- high and low glycemic foods, glycemic load, insulin index and insulin load, therapeutic effect of high fiber diet.
10. New advancement in diabetic treatment- insulin pump, latest therapeutic regimes of the disease

Suman

Twinkle

B.Sc. VI. Sem (Clinical Nutrition And Home Science)
SEMESTER VI
PRACTICAL
Reno -Nutrition & Dibato-nutrition

Marks-50

1. Estimation of abnormal constituents of urine (Protein, blood, glucose, acetone)
2. Estimation of serum level of urea, Creatinin, serum, Albumin, levels.
3. Preparation of Low Sodium Recopies.
4. Preparation of meals for various renal diseases, acute and chronic glomerulonephritis, renal failure, Renal Transplant.
5. Lesser Fluid Diets.
6. Estimation of Serum levels of Glucose.
7. Preparation of recopies with low carbose content.
8. Preparation of recopies with low glycaemic index.
9. High fiber diet and assessment of its effect on serum glucose level.
10. New therapeutic diets for the diabetic patients.
11. Preparation of hypo & Hyper Diets Osmolar diets.

Suman
Twinkle

Skill Development के अंतर्गत
वैकल्पिक पाठ्यक्रम सत्र 2021-22
ट्रांसलेशन प्रोफिसियेंसी (अनुवाद सामर्थ्य)
बी.ए./बी.एस-सी./बी.कॉम./बी.एच.एस-सी.

अंक योजना पूर्णांक : 100
मुख्य परीक्षा : 80
आंतरिक मूल्यांकन : 20

उद्देश्य –

आधुनिक युग में अनुवाद सामर्थ्य का महत्व अभिव्यक्ति–कौशल के साथ अंग्रेजी, हिंदी और आंचलिक भाषा छत्तीसगढ़ी में सक्षम होकर व्यक्तित्व विकास करना है । केन्द्र सरकार, राज्य शासन के समानांतर अर्द्धशासकीय और निजी संस्थानों में आजीविका की दृष्टि से इस पाठ्यक्रम का महत्व अधिक है । हिंदी भाषा में पारंगत होने के साथ इस पाठ्यक्रम से अंग्रेजी और छत्तीसगढ़ी में दक्षता होने से छात्रों का सम्यक विकास संभावित है जिससे उनमें इस पाठ्यक्रम के द्वारा रोजगार के अवसर उपलब्ध हो सकेंगें ।

अनुवाद, राजभाषा सहायक, हिंदी अधिकारी, ट्यूटर विक्रेता प्रतिनिधि, दूरदर्शन और आकाशवाणी के उद्घोषक व समाचार पत्रों के संवाददाता ।

पाठ्यक्रम –

इकाई – 1	अनुवाद – परिभाषा, लक्षण, स्वरूप
इकाई – 2	अच्छे अनुवाद के गुण
इकाई – 3	स्वर–व्यंजन वाक्य शुद्धि
इकाई – 4	कार्यालयीन हिंदी और अनुवाद
इकाई – 5	अनुवाद – अंग्रेजी से हिंदी

प्रायोगिक (व्यावहारिक) परियोजना कार्य 20 अंक

1. स्थानीय अथवा बाहरी सरकारी, अर्द्धसरकारी संस्थानों में परिभ्रमण के आधार पर दिए गए किसी भी विषय पर परियोजना रिपोर्ट तैयार करना ।
2. सामूहिक चर्चा ।
3. उच्चारण–अभ्यास ।

संदर्भ ग्रंथ –

1. अनुवाद विज्ञान – सिद्धांत और प्रयोग, डॉ. जयश्री शुक्ल, वैभव प्रकाशन, रायपुर।
2. अनुवाद समझें एवं करें, डॉ. विचार दास सुमन, वाणी प्रकाशन, नई दिल्ली।
3. व्यावहारिक हिंदी व्याकरण तथा रचना, डॉ. हरदेव बाहरी, वाणी प्रकाशन नई दिल्ली।

अंक–विभाजन

खण्ड	प्रश्न का प्रकार	विवरण	शब्द सीमा	चयन प्रश्न संख्या	प्रत्येक में अंक	कुल अंक
प्रथम	अतिलघुउत्तरीय/ वस्तुनिष्ठ प्रश्न	प्रत्येक इकाई से प्रश्न चुने जाने है।	–	06	02	12
द्वितीय	लघुत्तरीय प्रश्न	प्रत्येक इकाई से कम से कम 07 प्रश्न पूछे जाएंगे, (व्याख्या करना भी है) जिसमें से कोई 04 प्रश्न चयन किए जायेंगें।	60	04	05	20
तृतीय	दीर्घउत्तरीय प्रश्न	प्रत्येक इकाई स, कम से कम 07 प्रश्न पूछे जायेंगें, जिसमें से कोई 04 प्रश्न चयन किए जायेंगें ।	नहीं	04	12	48
अंक जोड़						80
आंतरिक मूल्यांकन						20
कुल अंक						100

GOVT. BILASA GIRLS' P.G. (AUTO.) COLLEGE
BILASPUR (C.G)
SYLLABUS 2021-2022
CLASS: B.A./B.SC/B.COM/B.SC.(H.Sc.)/BCA/BBA

Max. M - 60
Min. M – 21

SEMESTER- VI
BASICS OF WRITING SKILL

Note:

- **All questions are compulsory**
- **Questions are to be set from each unit**
- **There will be internal choice in each unit. Marks are indicated against the units.**

UNIT-I Parts of Speech I

a) Noun 05
b) Pronoun 05

UNIT-II Parts of Speech II

a) Verbs 05
b) Adverbs 05
c) Adjectives 05

UNIT-III Sentence Writing I [Interchange of Sentences]

a) Affirmative to Negative Sentences05
b) Interrogative and Assertive Sentences05
c) Exclamatory and Assertive Sentences 05

UNIT-IV Sentence WritingII[Conversion of Sentences]

a) Simple Sentences to Compound Sentences & Compound to Simple Sentences 05
b) Simple Sentences into Complex & Complex to Simple Sentences 05

UNIT-V (a) Notice Writing 05
(b) Arranging Sentences 05

Recommended Books:

- Synergy by Orient Blackswan.
- Advanced English Grammar by Martin Hewings.
- English Grammar and Composition by Wren and Martin.
- Total English by Beeta Publications.

24.8.21

24.8.21

Skill Development course
Semester VI
BAKERY

MARKS-60

UNIT-I

Introduction and scope of bakery, various kind of baking, products, structure of wheat grain.

Flours- types of flours available, composition, gluten, baking process.

UNIT-II

Raw materials required for bread making: role of flours, water, yeast, salt, sugar, milk and fat and other ingredient- egg, fruit, dried fruits, nuts, chocolates.

Leavening agents- fermentative and non fermentative, natural and chemicals- air steam, yeast.

UNIT-III

Bread making process, methods of bread making- straight dough method, delayed salt method, no time dough method, sponge and dough methods, characteristics of good bread, bread faults and their remedies.

UNIT-IV

Cakes- types of cakes, cake making process, cake making methods- Genoise methods, blending method, rubbing method, creaming method, sponge method, characteristics of good cakes, cake faults and remedies, importance of temperature for baking, icing & types of icing.

UNIT-V

Pasty making, biscuit, types of biscuit, cookies, characteristics of good cookies, cookies making methods- one stag methods, creaming method, sponge methods, types of cookies.

Importance of hygiene in bakery.

Twinkle Suman

Skill Development course
Semester VI
BAKERY

PRACTICALS

Marks-25

1. Weighing
2. Bread, toasts, Rusks and pizzas base.
3. Cake making- Sponge cake, Rock cake, fruit cake, fatless cake, Black forest cake, butter cake, Genoise cake, Birthday cake, Chocolate dipping cake, Wedding cake, Cheese cake.
4. Muffins and pastries
5. Biscuits- Salted Biscuits, Sweet, Ginger, Nankhatai, Nut biscuit, Chocolate and Cheese biscuits
6. Patties- Veg Patties, Cheese Patties
7. Types of Icing
8. Buns-Hot cross buns, fruit buns.

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Session 2021-22 Skill Based Course

34
~~33~~

SEMESTER VI

COMPUTER FUNDAMENTALS AND PC PACKAGE

UNIT-I

Basic of Computer Device

What is computer?, Components of computer system:-input devices ,output devices and CPU .Generation of computer, Types of computer, Characteristics and limitation of computer..

Computer memory

Primary Memory:-RAM and ROM, Secondary Storage:-Hard Disk Drive, CD,DVD,BRD,Optical Disk,Magnetic Tape, Magnetic disks.

Input /Output Devices

Keyboard ,mouse ,monitor ,trackball ,joystick, scanner(MICR,OCR,OMR,Bar code reader),printer and types of printer,plotter,light pen,touch screen.

UNIT-II

Basic of Computer Software

Introduction to software ,types of software:-System software and application software, Operating System, utilities software,word processing software,spreadsheet software,presentation software,database software.Virus and types of virus, malicious software.

UNIT-III

Introduction to MS Word

Documents and document Types,Menus,shortcuts, Working with Documents:Opening-new and existing file,Save file.

Working with text documents-Inserting, Deleting,cut,copy,paste,undo redo,

UNIT-IV

Introduction to MS Excel

Working with Spreadsheet and its Application, Working with spreadsheet-openings, saving file

Itroduction to MS Powerpoint

Application of Power point presentation, Creating new presentation, different presentation templates, setting backgrounds, Formatting a presentation-Adding style, Color, gradient fills, Adding header and footer,slide background,slide layout,Inserting pictures, movies, tables etc.Setting animation and transaction effect.

UNIT-V

Introduction to Web Component

Introduction of internet, Network, Types of Network, HTTP, Www, URL, HTML, Web Browser, FTP

Proxy Server ,e-mail.

SKILLD BASED COURCE

B.COM/B.Sc/B.A/B.Sc. Home Sc./BCA VI SEM

MM- 60

Paper I

E-COMMERCE AND TALLY

OBJECTIVE

This course is meant to acquaint the students with the principles of Business Economics as are applicable in business.

UNIT-I

Meaning and concept of Internet and E-Commerce: A brief history of the internet, Meaning and concepts, No Middleman, Networking, Accessibility, Timesaving, Player Synergy, High Transitional costs, Meaning of E-commerce, Cost of E-Commerce, Media Convergence. E-commerce and related services, techniques of E-Commerce System, Types of E-Commerce, Applications of E-Commerce, Advantages and Disadvantages of E-Commerce.

UNIT-II

Chanael of E-Commerce and Electronic Trading System : E-commerce and e-business, E-Market Basics, Different Types of E-marketplaces, Advantages of E-marketplaces, Benefits as a seller, Benefits as a buyer, E-Business Issues, E-marketplace Development, The Difference Between E-business, E-commerce, and E-marketplaces, Channels of E-commerce, The Web as an Advertising Channel, The Web as an Ordering Channel, Web as a customer Support Channel, Need for E-Commerce, Improved Productivity, Cost saving, Streamlined, Business Process, Better Consumer Service, Opportunities for new Business, E-commerce as an electronic trading system, The Role of a Specialist, The Role of a Market Maker, Electronic communication Network

ECNs).

UNIT-III

E-Payment, E-Payment Risk and Component: Customer communication, Special features required in Payment system, Banking and security markets, E-Payment systems, Checks and bank Transfers, EDI, Credit card Payment System, E-Cash and ATMs, Banks and the Internet, Development of Payment systems, digitized "e-cash" system, Credit card based systems, Business Issues and Economic Implications, A Classification of Credit Cards Based Payment. Benefits of using e-payment, Improvement in sales, increased Profits, Reduced Expenses, The Customer Perspective, Risks in E-Commerce, Risk management options, An Industry value chain.

Security Risk, Threats, Tool and Policy: Security risk of e-commerce, Public and Private keys, One-way functions, Types of Threats Associated with Information Technology,

Sources of security threats Security Tool and risk Management approach ,E-Commerce and security policy for e-commerce, Corporate Digital Library.

UNIT-IV

Introduction of Accounting Software- TALLY: Introduction, Creation of Company, Group and Ledger Creation, Display of Voucher, Creating Voucher, voucher Entry, Financial Statement, Display of Balance Sheet and P&L A/c, Other Report.

UNIT-V

Inventory Control : Introduction of Inventory, Creating Unit of measure, Stock Group, Godown, Category, and Stock Item, Creating Inventory Vouchers, Sale Order and Purchase Order, Preparing Debit and Credit Notes, Methods of Depreciation, Depreciation of Assets, Advance entries and Report.

PRACTICAL EXAMINATION & VIVA - VOCE **MM – 25**

(Based on Syllabus Mentioned Above)

References;

Henry Chan,Raymond Lee,Tharam Dillon : E-Commerce Fundamental & Applications. Wiley Publishers.

Subrata Bhaumick : A Guide Book on E-Commerce. Notion Press.

Gaurav Agarwal : Learn Tally Prime With GST Book.

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Presenting with power point : Creating Presentation, working with slides, Different type of slides, setting page layout, selecting background & applying design, adding Graphics to slide, adding sound & movie, Working with Tables, creating chart & Graph, adding special effect, slide Transition, advancing slides, animating slide, presenting slide show.

UNIT-V

Ms-Excel : Introduction of Ms-Excel, use of Excel Sheet, Saving ,opening, & printing workbook, Formatting Cell & text, Divide worksheet into pages, working with Formulas, setting page layout, adding Header & Footer, excel functions, using multiple documents, protecting your work, password protection, Chart & Graphs, Maps, Templates, using worksheet as database, using Graphics, sorting a database, Filtering a database, using auto filter.

MM – 25

PRACTICAL EXAMINATION & VIVA - VOCE

(Typing Skill in both Hindi and English in Computer

Ms-Office)

SKILLD BASED COURCE

B.COM/B.Sc/B.A/B.Sc. Home Sc./BCA VI SEM

MM- 60

Paper I

Professional proficiency in computer

OBJECTIVE

This course is meant to acquaint the students with the principles of Business Economics as are applicable in business.

COURSE INPUT

UNIT-I

Introduction of Computer: What is Computer and Computer System, Characteristics and Capabilities and Limitations; Classification of Computer: Analog, Digital, Hybrid, General and Special purpose computer, Micro, Mini , workstations, and Embedded Computer ,Generation of Computer, Number System, Basic Concept of Operating System.

UNIT-II

Computer Software And Hardware: Introduction of Software and Hardware, type of Software and Hardware, System software Vs. Application software, Types of System and Application Software, Difference between Program and Package, Input, output and Storage Devices.

UNIT-III

Personal Computer And Operating System : Introduction of PC and Its Components and uses, Fundamentals of MS-DOS , Physical Structure of the Disk, Compatibility of drives, Disk and DOS Versions, Internal DOS Commands- DATE, TIME,DIR,MD,CD,COPY,DEL,REN,VOL,CLS,PATH,TYPE, External DOS Commands- CHKDSK, XCOPY, PRINT, DISKCOPY, DISKCOMP,DOSKEY, HELP, TREE, SYS, LABEL, ATTRIB.

UNIT-IV

Ms Word :

Introduction of Ms-Word, Entering Text in Word, Creating & editing word documents, Formatting documents, aligning documents, indenting paragraphs, changing margin, formatting pages, Working with Tables, inserting and deleting cells, rows & columns, use bullets and numbering, Checking spelling & Grammar, Working with long documents, working with header & footer, adding page no. & footnote, working with graphics, inserting ClipArt, Working with templates, working with Mail-Merge, writing the form letter.