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Set P

B.Sc. (Entrepreneurship) (Semester - III) (New) (CBCS) Examination:
October/November - 2025
Entrepreneurship (Paper – VI)
Advanced Accountancy and Auditing (EN1302)

Day & Date: Tuesday, 04-11-2025

Max. Marks: 40

Time: 03:00 PM To 05:00 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 Multiple Choice Questions.

08

- 1) Which of the following is a primary feature of Tally software?
 - a) Email integration
 - b) Payroll processing only
 - c) Accounting and inventory management
 - d) Graphics designing

- 2) The shortcut key to create a ledger in Tally is _____.
 - a) Alt + C
 - b) Alt + L
 - c) Ctrl + L
 - d) Alt + N

- 3) GST is applicable on _____.
 - a) Agricultural income
 - b) Sale of goods and services
 - c) Salary income
 - d) Interest on savings

- 4) Final accounts include _____.
 - a) Journal and Cash Book
 - b) Trial Balance only
 - c) Trading, Profit & Loss Account and Balance Sheet
 - d) Purchase and Sale Book

- 5) Cash Flow Statement is prepared on _____.
 - a) Accrual basis
 - b) Credit basis
 - c) Working capital basis
 - d) Cash basis

- 6) Internal check system is designed to _____.
 - a) Reduce the number of employees
 - b) Facilitate external audit
 - c) Prevent and detect errors and frauds
 - d) Prepare tax returns

7) Who can be appointed as an auditor of a limited company?

- a) A minor
- b) An undischarged bankrupt
- c) A qualified Chartered Accountant
- d) A company director

8) Vouching of cash transactions involves checking ____.

- a) Fixed deposits
- b) Cash receipts and payments
- c) Inventory levels
- d) Asset depreciation

Q.2 Answer the following question: (Any Four)

08

a) What is Accounts Classification in Tally?

b) Define Bank Reconciliation Statement.

c) What is Fund Flow Statement?

d) Write any two objectives of auditing.

e) Mention any two disqualifications of an auditor.

f) What do you mean by Verification of Assets?

Q.3 Attempt the following questions. (Any Two)

08

Attempt the following questions (Any Two)

- a)** Explain the concept of Voucher Types and Classes in Tally.
- b)** Describe the procedure to calculate Loss of Stock due to fire.
- c)** Differentiate between Fund Flow Statement and Cash Flow Statement.

Q.4 Long Questions. (Any Two)

08

Long Questions: (Any Two)

- a)** Explain the scope and importance of Auditing.
- b)** Describe the role and significance of Internal Audit.
- c)** Explain how accounts are configured in Tally before ledger creation.

Q.5 Long Questions- (Any One)

08

Long Questions: (Any One)

- a) Discuss in detail the procedure of vouching credit transactions and its importance in auditing.
- b) Explain the statutory provisions related to the appointment, removal, and remuneration of an auditor in a limited company.

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B.Sc. (Entrepreneurship) (Semester - III) (New) (CBCS) Examination:
October/November – 2025
Microbial Biotechnology Paper–V(EN1305)
Genetics

Day & Date: Saturday, 08-11-2025

Max. Marks: 40

Time: 03:00 PM To 05:00 PM

Instructions: 1) All questions are compulsory.
2) Draw neat diagrams wherever necessary.
3) Figures to the right indicate full marks.

Q.1 Multiple Choice Questions:

08

- 1) Test cross determines ____.
 - a) whether two traits are linked or not
 - b) the genotype of F₂ plant
 - c) whether the two species will breed successfully or not
 - d) number of alleles in a gene

- 2) A fully expressed allele is referred to as ____.
 - a) Dominant
 - b) Recessive
 - c) Homologous
 - d) Heterozygous

- 3) If adenine is replaced from guanine, then the mutation is ____.
 - a) Transcription
 - b) Transition
 - c) Transversion
 - d) Frameshift mutation

- 4) Transfer of genetic material from the donor to recipient bacterium through cell contact is termed as ____.
 - a) transduction
 - b) Recombination
 - c) conjugation
 - d) Transformation

- 5) Transfer of genetic material in bacteria through virus is termed as ____.
 - a) Transduction
 - b) Recombination
 - c) Conjugation
 - d) transformation

- 6) Crossing over takes place in the ____.
 - a) Diakinesis stage
 - b) Anaphase stage
 - c) Pachytene stage
 - d) Leptotene stage

- 7) Which measure of central tendency includes the magnitude of scores?
 - a) Mean
 - b) Mode
 - c) Median
 - d) Range

- 8) Transposons were first discovered in ____.
 - a) Rice
 - b) Bacteria
 - c) Mice
 - d) Maize

Q.2 Answer following question. (Any Four) 08

- a) Define mutation.
- b) Explain Law of Independent assortment.
- c) What is linkage?
- d) Draw neat, labelled structure of Chromosome.
- e) Explain transformation.
- f) Explain Transposable elements.

Q.3 Write notes of the following questions. (Any Two) 08

- a) Define Transposable elements and explain its types.
- b) Add a detail note on Mendel's experiment.
- c) Explain factors affecting crossing over.

Q.4 Write notes of the following questions. (Any Two) 08

- a) Explain Law of Co-dominance and Incomplete dominance with suitable example.
- b) Define Chromosome and explain types of Chromosomes.
- c) Define and explain Chromosomal aberration with its types.

Q.5 Answer following question. (Any One) 08

- a) Define and explain the process of transformation in detail.
- b) What is Epistasis? Explain Complementary Gene Interaction.

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B.Sc. (Entrepreneurship) (Semester - IV) (New) (CBCS) Examination:
October/November – 2025
Entrepreneurship (Paper – VII)
Corporate Accounting and Professional Ethics (EN1401)

Day & Date: Monday, 03-11-2025

Max. Marks: 40

Time: 12:00 PM To 02:00 PM

Instructions: 1) All questions are compulsory.

- 2) Draw neat, labelled diagrams wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Use of log table and calculators is allowed.

Q.1 Multiple Choice Questions:

08

- 1) When a company issue shares at a premium, the excess amount received over the face value is credited to: ____.
a) Share Capital Account b) Share Premium
c) General Reserve Account d) Profit and Loss Account
- 2) Shares can be issued ____.
a) At par b) At premium
c) At discount d) All the above
- 3) Forfeited shares can be reissued at ____ a price.
a) Above the face value b) At the face value
c) Below the face value d) None of the above
- 4) The balance sheet of a company shows ____ of the company.
a) The financial position b) The profitability
c) The capital d) The reserves
- 5) The difference between the total assets and total liabilities of a company is equal to: ____.
a) Profit b) Loss
c) Capital d) Reserves
- 6) The process of winding up a company and distributing its assets among its creditors and members is known as: ____.
a) Liquidation Insolvency b) Bankruptcy
c) Insolvency d) None of the above
- 7) the liquidator's remuneration is generally paid from: ____.
a) The company's assets b) The shareholders' funds
c) The creditors' claims d) The government's funds

8) _____ is unethical business practice.

- a) Bribery and Corruption
- b) Polluting the environment
- c) Discrimination
- d) All the above

Q.2 Answer following question. (Any Four) 08

- a) What is share premium?
- b) What do you mean by authorized capital?
- c) What is forfeiture of the share?
- d) Define Code of Conduct.
- e) What is Multinational Companies?
- f) Define globalization.

Q.3 Write Short notes on. (Any Two) 08

- a) Explain need of valuation of shares.
- b) State order of payment in liquidation.
- c) Write note on corporate social responsibility and corporate governance.

Q.4 Answer following question. (Any Two) 08

- a) Explain methods of valuation of share.
- b) Explain modes of liquidation of a company.
- c) A liquidator is entitled to receive remuneration @ 2.5% of the assets realized and 2% on the amount distributed among the unsecured creditors. The assets realized Rs. 70,00,000 against which payment was made as follows:
Liquidation expenses Rs. 60,000 Preferential creditors Rs. 1,00,000 and Secured creditors Rs. 30,00,000; Unsecured creditors: Rs. 50,000.
Calculate the total remuneration payable to the liquidator.

Q.5 Answer following question. (Any One) 08

- a) Lifelong Ltd invited applications for 1,00,000 of its equity shares of Rs.10 each on the following terms:
Application money Rs.1 per share
Allotment money Rs.3 per share
First call Rs.3 per share
Final call Rs.3 per share
Applications for 1,00,000 shares were received; all calls and allotment money were duly received.
Give journal entries in the books of the company.
- b) Explain ethics in Marketing, Financial Management and Human Resource Management.

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B.Sc. (Entrepreneurship) (Semester - IV) (New) (CBCS) Examination:
October/November – 2025
Entrepreneurship (Paper - VIII)
International Marketing and Marketing Decision (EN1402)

Day & Date: Tuesday, 04-11-2025

Max. Marks: 40

Time: 12:00 PM To 02:00 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Draw neat, labelled diagrams wherever necessary.

Q.1 Choose the correct alternatives and rewrite the sentences again. 08

- 1) A brand is used to ____.
a) Confuse customers b) Identify a product
c) Set prices d) Store inventory

- 2) A product mix means ____.
a) One single product
b) Group of products offered by a company
c) Only services
d) Only physical goods

- 3) Pricing means ____.
a) Designing a product b) Deciding the cost of a product
c) Promoting a brand d) Delivering goods

- 4) Consumer behavior helps to understand ____.
a) How machines work b) How people buy products
c) How to hire employees d) How to design factories

- 5) Global marketing means ____.
a) Selling products only locally
b) Selling products in many countries
c) Manufacturing only
d) Importing goods only

- 6) E-commerce is done using: ____.
a) Newspapers b) Radio
c) Internet d) Posters

- 7) Import means: ____.
a) Selling to other countries
c) Buying from other countries b) Making products
d) Giving free samples

8) A multinational company operates in ____.

- a) One country
- b) Many countries
- c) One city
- d) One region only

Q.2 Answer the following question. (Any Four)

08

- a) What is a Product Life Cycle?
- b) List the types of products.
- c) What is price war?
- d) Define global marketing.
- e) Define internet marketing.
- f) What is physical distribution?

Q.3 Answer following question. (Any Two)

08

a) Explain the process of product idea generation.
b) Discuss any four methods of pricing.
c) Differentiate between hypermarkets and supermarkets.

Q.4 Answer following question. (Any Two)

08

- a)** Differentiate between local and multinational companies.
- b)** Describe how internet marketing helps in customer engagement.
- c)** Explain elements of product positioning.

Q.5 Answer following question. (Any One)

08

- a) Explain the importance of segmentation, targeting, and positioning in marketing.
- b) Develop an e-marketing strategy for launching a new product online.

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**B.Sc. (Entrepreneurship) (Semester - IV) (New) (CBCS) Examination:
October/November – 2025
Industrial Chemistry (Paper – VII)
Analytical and Industrial Aspects of Physical Chemistry (EN1403)**

Day & Date: Thursday, 06-11-2025

Max. Marks: 40

Time: 12:00 PM To 02:00 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 Choose correct options.

08

1) The conductance is _____ of resistance.

- Reciprocal
- Same
- Singular
- Rational

2) For flame photometry, _____ sample is used.

- Solid
- Liquid
- Both a and b
- None of these

3) In conductivity cells, the electrodes are made up of _____.

- Gold
- Platinum
- Silver
- Palladium

4) In premix burner, _____ of the sample is used.

- 100%
- 50%
- only 5%
- nearly 95%

5) _____ method gives exact end point.

- Classical
- Second derivative
- First derivative
- Both a and c

6) _____ electrode is an indicator electrode.

- Calomel
- Glass
- Platinum
- All of these

7) Optical density (O.D) is given by expression _____.

- $O.D. = \log I_t / I_o$
- $O.D. = \log I_o / I_t$
- $O.D. = \log I_o / I_a$
- $O.D. = \log I_o / I_e$

8) According to Faradays _____ law of electrolysis, ions are all discharged in same amounts.

- First
- Third
- Second
- Fourth

Q.2	Answer following question. (Any Four)	08
a)	State Lambert and Beer's law.	
b)	Draw neat labelled diagram of glass electrode.	
c)	Draw curves of analytical methods in potentiometric titrations.	
d)	How conductivity water is prepared?	
e)	What are different components of flame photometer.	
f)	What is mean by conductance and give its unit.	
Q.3	Short Notes. (Any Two)	08
a)	Transport number.	
b)	Total consumption burner	
c)	Photoelectric colorimeter.	
Q.4	Answer following question. (Any Two)	08
a)	Explain moving boundary method.	
b)	Explain demerits of flame photometer.	
c)	Explain the deviations from Beer's law.	
Q.5	Answer following question. (Any One)	08
a)	Explain conductometric titration between strong acid and weak base.	
b)	Explain in detail quinhydrone and glass electrode and their uses in determination of pH.	

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**B.Sc. (Entrepreneurship) (Semester - IV) (New) (CBCS) Examination:
October/November – 2025
Industrial Chemistry (Paper – VIII)
Industrial Aspects of Applied Chemistry (EN1404)**

Day & Date: Friday, 07-11-2025
Time: 12:00 PM To 02:00 PM

Max. Marks: 40

Instructions: 1) All questions are compulsory.
2) Draw neat diagrams and give

2) Draw heat diagrams and give equations wherever necessary.
2) Figures to the right indicate full marks.
3) Use of logarithmic table and calculators is allowed.
(At. Wts.: H=1, C=12, O=16, N=14, Na=23, Cl=35.5)

(At. Wts.: H=1, C=12, O=16, N=14, Na=23, Cl=35.5)

Q.1 Choose the correct alternative for the following.

08

8) Cement is primarily used for ____.

- a) Insulation
- b) Decoration
- c) Lubrication
- d) Structural support

Q.2 Answer following question. (Any Four)

08

- a)** What are the types of steel?
- b)** Define the terms:
 - 1) Throwing Power
 - 2) Covering Power
- c)** What are the qualities of ideal fertilizer?
- d)** Define:
 - 1) Special glass.
 - 2) Coloured glass.
- e)** What are the main components of ceramics?
- f)** Which raw material is used for preparation of glass?

Q.3 Write short notes. (Any Two)

08

- a) L.D. process.
- b) Aluminum anodizing process.
- c) Tank furnace for manufacturing of glass.

Q.4 Answer following question. (Any Two)

08

- a) Describe in detail the electroplating of chromium.
- b) Discuss various types of cement with their applications.
- c) Give the properties of ceramic material.

Q.5 Answer following question. (Any One)

08

a) Give various methods of reduction of ore. Explain extraction of Iron by blast furnace

b) Discuss in detail the process of manufacture of urea and Triple superphosphate.

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**B.Sc. (Entrepreneurship) (Semester - IV) (New) (CBCS) Examination:
October/November – 2025**
Microbial Biotechnology Paper-VII (EN1405)
Molecular Biology

Day & Date: Saturday, 08-11-2025

Max. Marks: 40

Time: 12:00 PM To 02:00 PM

Instructions: 1) All questions are compulsory.

2) Draw neat diagrams and give equations wherever necessary.
3) Figures to the right indicate full marks.
4) Use of logarithmic table and calculators is allowed.

Q.1 Multiple Choice Questions:

08

Q.2	Answer following question. (Any Four)	08
a)	Central Dogma.	
b)	Properties of Genetic code.	
c)	Draw structure of DNA.	
d)	DNA polymerases.	
e)	Okazaki fragments.	
f)	Role of Ribosomes in translation.	
Q.3	Answer following question. (Any Two)	08
a)	Add a note on Salient features of double helix	
b)	Define topoisomerase and write a note on types of topoisomerases.	
c)	Discuss Rolling Circle Model of replication.	
Q.4	Answer following question. (Any Two)	08
a)	Explain SOS repair mechanisms and its disorders.	
b)	Explain in detail about Trp operon	
c)	Define DNA damage and add a note on Mismatch repair system.	
Q.5	Answer following question. (Any One)	08
a)	Discuss in detail about Enzyme involved in DNA replication of prokaryotes.	
b)	Add a detailed note on Lac operon.	

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B.Sc. (Entrepreneurship) (Semester - IV) (New) (CBCS) Examination:
October/November – 2025
Microbial Biotechnology (Paper - VIII)
Food and Dairy Technology (EN1406)

Day & Date: Monday, 10-11-2025
Time: 12:00 PM To 02:00 PM

Max. Marks: 40

Instructions: 1) All questions are compulsory.
2) Draw neat diagrams wherever necessary.
3) Figure to right indicate full marks.

Q.1 Choose correct alternatives: (MCQ) 08

- 1) UHT stands for ____.
a) Ultra Heat Transfer b) Ultra-High Temperature
c) Under High Treatment d) Ultra Hygiene

- 2) Which of the following is NOT a method of food preservation?
a) Drying b) Freezing
c) Frying d) Canning

- 3) Which test is used to check the efficiency of pasteurization?
a) MBRT b) Resazurin Test
c) Phosphatase Test d) Catalase Test

- 4) Ice cream hardening is done at what stage?
a) Before packaging b) After freezing
c) Before mixing d) Before flavoring

- 5) Which food is most susceptible to microbial spoilage?
a) Dried beans b) Fresh fish
c) Canned vegetables d) Sugar

- 6) Which of the following is a defect in butter?
a) Creaminess b) Rancidity
c) Sweetness d) Hardness

- 7) The definition of cheese involves: ____.
a) Only milk solids b) Fermented fats
c) Coagulated milk protein d) Butter and cream

- 8) What is the major factor affecting microbial growth in food?
a) Temperature only b) pH only
c) Intrinsic and extrinsic factors d) Light

Q.2 Answer following question. (Any Four) 08

- a) Define Food Poisoning?
- b) What is pasteurization?
- c) Mention any two uses of cheese.
- d) What are canned foods?
- e) List any two defects of butter.
- f) Define homogenized milk.

Q.3 Answer following question. (Any Two) 08

- a) Discuss the process of canning and its importance in food technology.
- b) Write a short note on the classification and composition of butter?
- c) Describe microbial spoilage of fruits and vegetables.

Q.4 Answer following question. (Any Two) 08

- a) Explain the process and significance of phosphatase test?
- b) Write a note on MBRT?
- c) Explain food poisoning caused by microorganisms and preventive measures.

Q.5 Answer following question. (Any One) 08

- a) Describe the intrinsic and extrinsic factors affecting microbial growth in food?
- b) Explain different methods of food preservation with examples?

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**B.Sc. (Entrepreneurship) (Semester - V) (New) (CBCS) Examination:
October/November - 2025
English
Business English (EN1501)**

Day & Date: Tuesday, 28-10-2025
Time: 09:00 AM To 11:00 AM

Max. Marks: 40

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 Choose the correct word /phrase from the given options and complete the sentence. 08

Q.2	Write answer in short. (Any Four)	12
a)	Why do men and women have exits and entrances in the poem of Shakespeare?	
b)	What did you think after reading the short story 'The Home-coming'?	
c)	Mention all the three visions of Dr. APJ Abdul Kalam.	
d)	Describe the character sketch of the Village School Master.	
e)	Why does poet criticize money madness?	
f)	What is the main theme of the poem 'The Queen's Rival'?	
Q.3	Answer any one of the following questions.	10
a)	What are the 21 st Century Skills? Write in detail.	
	OR	
b)	Write a detailed note on literary skills and life skills.	
Q.4	Describe in detail the four C's into your own words.	10

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B.Sc. (Entrepreneurship) (Semester - V) (New) (CBCS)
Examination: October/November - 2025
Business Finance (EN1502)

Day & Date: Wednesday, 29-10-2025
Time: 09:00 AM To 12:00 PM

Max. Marks: 80

Instructions: 1) All questions are compulsory.

- 2) Draw neat diagrams and give equations wherever necessary.
- 3) Figures to right indicate full marks.
- 4) Use of logarithmic table and calculators is allowed.

Q.1 A) Multiple choice questions.

10

B) Answer in one sentence.

06

- 1) What do you mean by finance?
- 2) What is a "budget" in financial planning?
- 3) What is lease financing?
- 4) Long Form of IPO.
- 5) What is a prospectus in the marketing of securities?
- 6) What is NIFTY?

Q.2 Solve the following. (Any Eight)

16

- a) What do you mean by Shares.
- b) What is working capital?
- c) What is venture capital?
- d) What is Public deposits?
- e) What is credit creation?
- f) What is full form of BSE?
- g) What is the Sensex?
- h) Define financial plan.
- i) What is international finance?
- j) What is an American Depository Receipt (ADR)?

Q.3 A) Answer the following. (Any Two)

10

1) Explain sources of working capital.
2) Explain objectives of financial planning.
3) Explain importance of lease finance.

B) Short note/Solve.

06

Discuss the role of Securities and Exchange Board of India (SEBI).

Q.4 A) Answer the following. (Any Two)

08

1) Explain objectives of business finance.
2) Discuss Lease V/s Buy decision.
3) Explain methods of marketing of securities.

B) Describe the following:

08

Discuss working of BSE and NSE.

Q.5 Answer the following. (Any Two)

16

- a)** What is business finance? Explain long term sources of business finance.
- b)** What is stock exchange? Explain functions of stock exchange.
- c)** What is financial planning? Explain steps in financial planning.

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B.Sc. (Entrepreneurship) (Semester - V) (New) (CBCS) Examination:
October/November – 2025
Human Resource Management (EN1503)

Day & Date: Thursday, 30-10-2025

Max. Marks: 80

Time: 09:00 AM To 12:00 PM

Instructions: 1) All questions are compulsory.

- 2) Draw neat diagrams and give equations wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Use of logarithmic table and calculator is allowed.

Q.1 A) Multiple choice questions.

10

- 1) _____ is not a core function of Human Resource Management (HRM).
 - a) Recruitment and selection
 - b) Employee training and development
 - c) Sales and marketing
 - d) Performance management
- 2) _____ is an internal source of recruitment.
 - a) Social media advertising
 - b) Employee referrals
 - c) Job postings on company website
 - d) Job fairs
- 3) _____ is an external source of recruitment.
 - a) Job fairs
 - b) Employee referrals
 - c) Promotions from within the company
 - d) All the above
- 4) _____ is a component of a job description.
 - a) Performance standards
 - b) Salary range
 - c) Job title
 - d) All of the above
- 5) The purpose of a _____ is to outline the qualifications required for a job.
 - a) Job specification
 - b) Job Analysis
 - c) Job description
 - d) None of these
- 6) _____ is a type of interview.
 - a) Structured interview
 - b) Unstructured interview
 - c) Behavioral interview
 - d) All of the above
- 7) _____ is a type of on-the-job training.
 - a) Lectures
 - b) Simulations
 - c) Job rotation
 - d) Case studies

8) _____ is a type of off-the-job training.

- a) Lectures
- b) Simulations
- c) Job rotation
- d) Case studies

9) Common criterion for promotion:

- a) Seniority
- b) Performance
- c) Education
- d) All of the above

10) _____ is a type of direct compensation.

- a) Health insurance
- b) Retirement plans
- c) Base salary
- d) Paid time off

B) Answer in one sentence.

06

- 1) Define human resource.
- 2) Define recruitment.
- 3) What is on-job-training?
- 4) Define Job Analysis.
- 5) Define Job satisfaction.
- 6) What is provident fund?

Q.2 Solve the following. (Any Eight)

16

- a) Define job description.
- b) Define job specification.
- c) What do you mean by transfer?
- d) What is orientation training?
- e) What is demotion?
- f) What is reason for transfer of an employee?
- g) What is reason for promotion of an employee?
- h) Define performance appraisal.
- i) What is E.S.I.?
- j) What is gratuity?

Q.3 A) Attempt the following. (Any Two)

10

Attempt the following (Any Two)

- 1) Objectives of Human Resource Management.
- 2) Need of training.
- 3) Purpose of promotion.

Q.3 B) Write Short Note.

06

Wrote short note.

Q.4 A) Answer the following. (Any Two)

08

1) Explain types and reasons of transfer.
2) Steps in career development system.
3) Explain methods of performance appraisal.

B) Describe the following.

08

Describe the following:
Explain external and internal sources of recruitment.

Q.5 Answer the following. (Any Two)**16**

- a)** What is Human Resource Management? Explain functions of Human Resource Management.
- b)** Explain steps in selection procedure.
- c)** What is training? Explain different training methods.

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**B.Sc. (Entrepreneurship) (Semester - V) (New) (CBCS) Examination:
October/November – 2025
Spectroscopic Methods (EN1504)**

Day & Date: Friday, 31-10-2025
Time: 09:00 AM To 12:00 PM

Max. Marks: 80

Instructions: 1) All questions are compulsory.

- 2) Draw neat, labelled diagrams wherever necessary.
- 3) Figures to right indicate full marks.
- 4) Use of log tables and calculators is allowed.

Q.1 A) Multiple choice questions.

10

8) In NMR spectroscopy _____ radiations are used.

- a) UV
- b) IR
- c) Radiofrequency
- d) Visible

9) Hypsochromic shift is a shift of absorption maximum to a _____.
a) longer wavelength
b) decrease in the intensity of absorption
c) shorter wavelength
d) none of these

10) Which of the following compound has chemical shift value more than 10?
a) Alcohol

- b) Aldehyde
- c) Carboxylic acids
- d) Esters

B) Fill in the blank.

06

- 1) Vibrational frequency of a band can be calculated by using _____ law.
- 2) The ions which are produced from the decomposition between ion source and ion collector is known as _____.
- 3) In mass spectroscopy, $(M + 1)$ peak indicates _____ ion.
- 4) The ratio of signifying a triplet is, _____.
- 5) The wavelength range for UV region of the electromagnetic radiation is _____.
- 6) Auxochrome contains the atoms having _____.

Q.2 Solve the following. (Any Eight)

16

a) How will you distinguish the following compounds by using IR spectroscopy

- 1) $CH_3 - CH_2 - NH_2$
- 2) $CH_3 - CO - NH_2$

b) Define the following.

- 1) Equivalent proton.
- 2) Non-equivalent proton.

c) Write types of fundamental modes of vibrations.

d) What is by chemical shift?

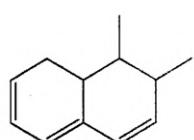
e) What are magnetic and non-magnetic nuclei with suitable example.

f) Define Hyperchromic shift and Bathochromic shift.

g) Define shielding and deshielding effect with suitable example.

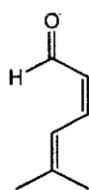
h) State nitrogen rule. Give its importance.

i) What is homoannular diene? Calculate λ_{max} for the following compound.

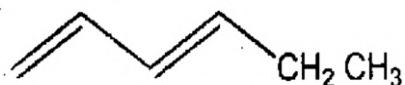


j) Calculate λ_{max} for the following diene and enone by using Woodward-Fieser rule:

a)



b)



Q.3 A) Attempt the following. (Any Two)

10

- 1) Discuss the applications of Mass spectroscopy.
- 2) What is selection rule? Discuss the IR-active transitions and 1R-inactive transitions with suitable example.
- 3) Explain Hook's law. How it is useful to determine frequency of vibration.

B) Assign the structure for the following compound using spectral data:

06

Molecular formula: $C_4H_7O_2Br$ IR: 1720, 3300, 1440, 920 cm^{-1} PMR: t, 4.2 δ (1H,), t, 1.1 δ (3H,), quintet 2.1 δ (2H,), s, 10.5 δ (1H)

Q.4 A) Attempt the following. (Any Two)

08

- 1) With suitable example, explain the following terms used in UV spectroscopy;
 - 1) Chromophore.
 - 2) Auxochrome.
 - 3) Bathochromic shift.
 - 4) Hyperchromic shift.
- 2) Use of mass spectroscopy in determination of molecular formula.
- 3) What is mass spectrum explain with suitable example.

B) What are the scale used in NMR spectroscopy for the measurement of chemical shift? how they are related to each other?

08

Q.5 Attempt the following. (Any Two)

16

a) Assign the structure of following compounds by using spectral data.

- 1) Molecular formula: C_4H_8O ,
 $m/e = 72$, IR = 1720 cm^{-1}
 PMR – δ 1.05 (triplet, 3H), δ 3.6 (singlet, 3H), δ 2.50 (quarter, 2H).
- 2) Molecular formula: C_3H_7Br ;
 PMR: 1.7 δ (6H, d), 4.3 δ (1H, septet)

b) Explain spin - spin coupling. Assign structure to the compound having following spectral data.
 Name the compound.
 Molecular formula: $C_{10}H_{13}Cl$
 2.3 δ (s, 6H), 3.07 δ (s, 2H), 7.27 δ (s, 5H)

c) Explain different types of electronic transitions involved in UV spectroscopy.

**Seat
No.**

Set P

**B.Sc. (Entrepreneurship) (Semester - V) (New) (CBCS) Examination:
October/November – 2025
Advances in Fermentation Technology (EN1505 - A)**

Day & Date: Saturday, 01-11-2025

Max. Marks: 80

Time: 09:00 AM To 12:00 PM

Instructions: 1) All questions are compulsory.

- 2) Draw neat labelled diagrams wherever necessary.
- 3) Figures to right indicate full marks.
- 4) Use of log table and calculators is allowed.

Q.1 A) Multiple choice questions.

10

B) Answer the following.

06

- 1) Define Biosafety.
- 2) Define Copyright.
- 3) Define IPR.
- 4) Define Toxoid.
- 5) Types of interferon.
- 6) Define quality assurance.

Q.2 Solve of the following. (Any Eight)

16

a) What is PHB?
b) What is pyrogen?
c) What is attenuated vaccine?
d) Enlist application of bacteriocin.
e) What is international code?
f) What are TRIPS?
g) Define bioethics.
h) What is significance of sterility testing?
i) Enlist applications of glycerol.
ii) Enlist the names of rubber producing microorganisms.

Q.3 A) Attempt of the following. (Any Two)

10

a) Explain in detail production of Xanthan gum.
b) Describe in detail production of DNA vaccine.
c) Discuss in brief test for carcinogenicity.

B) Short note/Solve.

06

Write detail account on mushroom cultivation

Q.4 A) Answer of the following. (Any Two)

08

ANSWER OF THE FOLLOWING. (Any Two)

- 1) Write in detail insulin production.
- 2) Explain in detail IPR and its types.
- 3) Define patent and give suitable example of patenting of biological material.

B) Describe/Explain/Solve.

08

Explain in detail the process of acetone -butanol production with its applications.

Q.5 Attempt of the following. (Any Two)

16

- a) Explain in detail the process of vinegar production.
- b) Describe in detail production of Pullulan and its role.
- c) Describe in detail GMP

**Seat
No.**

Set P

**B.Sc. (Entrepreneurship) (Semester - V) (New) (CBCS) Examination:
October/November – 2025
Wine Technology (EN1505 - B)**

Day & Date: Saturday, 01-11-2025

Max. Marks: 80

Time: 09:00 AM To 12:00 PM

Instructions: 1) All questions are compulsory.

- 2) Draw neat labelled diagrams wherever necessary.
- 3) Figures to right indicate full marks.
- 4) Use of log table and calculators is allowed.

Q.1 A) Multiple choice questions.

10

9) Fermentation occurs in the _____.
a) Presence of oxygen b) Absence of oxygen
c) Presence of nitrogen d) Presence of carbon

10) ____ equipment is used for fermentation in wine making.
a) Press machine b) Fermenters
c) Clarifiers d) Destemmers

B) Fill in the blank/Definition/One sentence answer/One word answer/ Give the name/Predict the product etc. 06

- 1) What is the definition of aging in winemaking?
- 2) Give examples of yeast used in wine fermentation.
- 3) Name any two metabolites produced in wine.
- 4) Enlist the carbon sources used in fermentation media.
- 5) Define the term "dealcoholization".
- 6) A process of converting sugar into alcohol is known as?

Q.2 Solve of the following. (Any Eight) 16

- a) List common grape varieties.
- b) Define clarification.
- c) What is curing of wine?
- d) What is Wine Score Cards?
- e) What is "must" in winemaking?
- f) Which state in India is the hub for winemaking?
- g) What are chemical constituents of oak?
- h) Role of yeast in wine
- i) What is organic wine?
- j) What is spritz in wine?

Q.3 A) Attempt of the following. (Any Two) 10

- 1) Explain the process of maceration.
- 2) Describe the classification of wines and the criteria used to determine wine quality.
- 3) Write a short note on the biochemistry of alcoholic fermentation.

B) Write a short note on the history of winemaking. 06

Q.4 A) Answer of the following. (Any Two) 08

- 1) Briefly describe new concepts in wine production.
- 2) Chemical constituents of wine?
- 3) Importance of automation operation in wine technology.

B) What are the environmental factors affecting fermentation? 08

Q.5 Attempt of the following. (Any Two) 16

- a) Describe Pre-fermentation Practices in wine production.
- b) Describe in detail sensory perception and assessment of wine?
- c) Write in details on post fermentation treatment of wine.