

S. B. Roll. No.....

APPLIED CHEMISTRY
2nd Exam/CSE/IT/0103/Dec'25
(For 2023 Batch Onwards)

Duration: 3Hrs.

M.Marks:50

Note: Calculators are allowed.

SECTION-A

Q1. Do as directed any nine of the following.

9x1=9

- i. Chemical symbol of Helium is: a) HE b) He c) hE d) None of these.
- ii. Number of neutrons in $^{234}\text{U}_{92}$ is: a) 92 b) 234 c) 142 d) None of these.
- iii. Electronic configuration of Scandium is: a) $[\text{Ar}] 3d^1 4s^2$ b) $[\text{Ar}] 3d^0 4s^2$ c) $[\text{Ar}] 3d^3 4s^0$ d) None of these.
- iv. A concentration of 10mg/L is equal to: a) 0.10ppm b) 100ppm c) 10ppm d) None of these.
- v. pH of an acidic solution is: a) less than 7 b) more than 7 c) equal to 7 d) more than 14.
- vi. Gain of electrons by a species is known as:
a) Oxidation b) Reduction c) Redox reaction d) All of the above.
- vii. The following is/ are caused due to the hardness of the boiler feed water:
a) Caustic embrittlement b) Corrosion c) Priming d) All of the above.
- viii. Polythene is a polymer of the monomer ethene. (T/F)
- ix. Temperature does not affect the molality. (T/F)
- x. Lubricant decreases the friction between the moving machine parts. (T/F)
- xi. High carbon residue is desirable for a lubricant. (T/F)
- xii. Diesel is a primary fuel. (T/F)

SECTION-B

Q2. Attempt any five questions.

5x4=20

- a. Calculate the molecular mass of NaCl and CaCO_3 . Atomic mass of Ca = 40 amu, Cl = 35.5, Na = 23 amu, O = 16 amu, C = 12 amu, and H = 1 amu.
- b. Differentiate between sigma bond and pi bond.
- c. Write a short note on pH of a solution. What is the pH of 10^{-3}M HCl solution?
- d. Define molarity and molality. Give their units.
- e. Enlist the desired characteristics of drinking water.
- f. Give any four applications of polymers in industry and daily life.
- g. Define: flash point, fire point, cloud point and pour point of a lubricant.

SECTION-C

Q3. Attempt any three questions.

3x7=21

- i. What is hard water? Discuss in detail the zeolite or permutit process to remove the permanent hardness of water.
- ii. Define electrolysis. Give a detailed account of Faraday's laws of electrolysis.
- iii. Give any seven characteristics of a good fuel.
- iv. Give a detailed account of the postulates of Bohr's model of the atom.
- v. Define a chemical bond. Explain the formation of ionic and covalent bonds with one example of each.

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APPLIED CHEMISTRY
1st Exam/Common/0103/Dec'25
(For 2023 Batch Onwards)

Duration: 3Hrs.

M.Marks:50

SECTION-A

Q1. Do as directed any nine of the following.

9x1=9

- a. The shape of p orbital is like _____
- b. Chemical formula of Sodium hydroxide is _____
- c. Anions are _____ ions.
- d. 1 PPM means _____
- e. Water gas is mixture of _____
- f. For $n=2$, l can have values _____
- g. Molecule of methane has tetrahedral geometry. (T/F)
- h. Monomer of PVC is vinyl chloride. (T/F)
- i. Temporary hardness cannot be removed by boiling. (T/F)
- j. Electric current is flow of atoms. (T/F)
- k. pH of acidic solution is always less than 7. (T/F)
- l. Pi bond is weaker than sigma bond. (T/F)

SECTION-B

Q2. Attempt any five questions.

5x4=20

- i. Explain Flash point and Fire point.
- ii. What are Primary and secondary cells? Give one example of each.
- iii. What is difference between sigma and pi bond.
- iv. Define Molarity and molality with units.
- v. What is Sterilization of water? Name three substances used for sterilization of water.
- vi. Explain Bohr atomic model.
- vii. Give the preparation of PVC and Teflon and write their uses.

SECTION-C

Attempt any three questions.

3x7=21

- Q3.** a) What are advantages of gaseous fuel over solid fuel? **4**
b) What is Biogas? Give its composition and use. **3**
- Q4.** a) Explain Buffer solution with its types. **4**
b) Calculate pH of 0.01M HCl. **3**
- Q5.** a) Calculate molecular mass of Sodium sulphate (Na_2SO_4), given atomic mass of Na=23, S=32, O=16. **3**
b) State Faraday 1st and 2nd law of Electrolysis. **4**
- Q6.** a) State and explain Pauli's exclusion principle. **4**
b) State Heisenberg uncertainty principle. **3**
- Q7.** a) Explain Saponification value and give its significance **3**
b) Explain addition and condensation polymer **4**

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APPLIED MATHEMATICS-I
1st Exam/Common/0101/Dec'25
(For 2023 Batch Onwards)

Duration: 3Hrs.

M.Marks:50

Note: Use of graph paper is allowed.

SECTION-A

Q1. Do as directed any nine of the following.

9x1=9

- i. A Matrix whose all elements are zero is called
a) Null Matrix b) Scalar Matrix c). Unit Matrix d) Singular Matrix
- ii. If ${}^nC_0 + {}^nC_n =$ a) 0 b) 1 c) 2 d) -1
- iii. The value of 120° in Radians a) $\frac{2\pi}{3}$ b) $\frac{\pi}{3}$ c) $\frac{\pi}{2}$ d) $\frac{\pi}{4}$
- iv. Evaluate $1 + i^2 + i^4 + i^6$ a) 1 b) 2 c) 0 d) 3
- v. $\sin 420^\circ =$ a) $\frac{1}{2}$ b) $\frac{\sqrt{3}}{2}$ c) 0 d) 1
- vi. Slope of the line $x+y-1=0$ is _____
- vii. Two lines are _____ if their slopes are equal.
- viii. $X^2 + y^2 = 9$ then Radius of circle is _____
- ix. $\tan(45^\circ + \theta) = \frac{1 + \tan \theta}{1 - \tan \theta}$ (T/F)
- x. $\frac{(x+1)(x-2)}{(x-3)(x+4)}$ is written in Proper Fraction (T/F)
- xi. $4 - 3i$ is Expression of Polar Form (T/F)
- xii. If $\sin 50^\circ \cos 40^\circ + \cos 50^\circ \sin 40^\circ = 1$ (T/F)

SECTION-B

Q2. Attempt any five questions.

5x4=20

- a. Resolve into partial fractions $\frac{x+1}{(x-2)(x-3)}$
- b. Show that $\tan(180^\circ + \theta) \times \sin(90^\circ + \theta) \times \sec(90^\circ - \theta) = 1$
- c. Prove that $\sin 51^\circ + \cos 81^\circ = \cos 21^\circ$
- d. Find the modulus and argument of complex number $\sqrt{3} + i$.
- e. Find the equation of a straight line which passes through (2, -3) and makes an angle of 45° with x-axis.
- f. If $\frac{x}{a} + \frac{y}{b} = 1$ passes through the points (0, -9) and (12, 0). Find a and b.
- g. $(x-3y)^5$ Expand it by using binomial theorem.

SECTION-C

Q3. Attempt any three questions.

3x7=21

- i. The angular elevation of a tower from a point in the horizontal line to the foot of tower is 30° . Determine the height of the tower if the distance of the point from the foot of tower be 120 meters.
- ii. Evaluate $A^2 - 3A + 9I$ if I is the unit matrix of order 3 and $A = \begin{bmatrix} 1 & 2 & 3 \\ 2 & 3 & 1 \\ 3 & 1 & 2 \end{bmatrix}$
- iii. Find the equation of the circle and radius which is passing through the points (0,0), (2, 0) and (0, 4).
- iv. Show that when x is small, $\sqrt{x^2 + 4} - \sqrt{x^2 + 1} = 1 - \frac{1}{4}x^2$
- v. Solve the following linear programming problem graphically:
Minimize $Z = 200x + 500y$
Subject to the constraints:
 $x + 2y \geq 10$
 $3x + 4y \leq 24$
 $x \geq 0, y \geq 0$

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APPLIED PHYSICS-I
1st Exam/Common/0102/Dec'25
(For 2023 Batch Onwards)

Duration: 3Hrs.

M.Marks:50

SECTION-A

Q1. Do as directed any nine of the following.

9x1=9

- i. Oxygen boils at -183°C . What is the value in Kelvin scale?
- ii. Small water drops are spherical; this is due to...
a) viscosity b) density c) gravity d) surface tension.
- iii. In a generator _____ energy is converted into _____ energy.
- iv. Dimensional formula of work is _____.
- v. Dot product of vectors: $\vec{A} = 2\vec{i} + 4\vec{j} - \vec{k}$ and $\vec{B} = 3\vec{i} - 2\vec{j} - 2\vec{k}$ is _____
- vi. Convert a velocity of 20 km/hr into SI units.
- vii. Rolling friction is more than the sliding friction. (True/False)
- viii. Air is heated by conduction process. (True/False)
- ix. Ratio of normal stress to the longitudinal strain is called:
a) Bulk Modulus b) Modulus of rigidity c) Young's Modulus d) none of these.
- x. Horizontal component of a 10 N force acting at 30° is _____
- xi. What is a thermostat?
- xii. Frequency of a wheel rotating with 120 rpm is _____

SECTION-B

Q2. Attempt any five questions.

5x4=20

- a. Explain the laws of friction.
- b. An engine lifts 10Kg of coal per hour from a mine whose depth is 180 m. find the power of engine.
- c. Explain why curved roads are generally banked.
- d. What do you mean by Atmospheric pressure? Explain a method to calculate it.
- e. Why is it easier to pull than to push a lawn roller?
- f. Define Modes of transfer of heat.
- g. Check the correctness of the formula $T = 2\pi \sqrt{\frac{L}{g}}$ where g is acceleration due to gravity and L is the length of simple pendulum.

SECTION-C

Q3. Attempt any three questions.

3x7= 21

- i. a) Explain the properties of heat radiation. **4**
b) What are the limitations of dimensional analysis **3**
- ii. Define Hook's law. Discuss the significance of the stress strain curve **7**
- iii. a) Resultant of two equal forces acting at right angle to each other is 1414 N. Find the magnitude of each force. **4**
b) State and explain the parallelogram law of vectors? **3**
- iv. a) Prove that the mechanical energy of a freely falling body is always constant. **5**
b) Why do clocks run slower in summer **2**
- v. Write down the fundamental quantities and their units in SI system. **7**

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ENGINEERING DRAWING-I

1st Exam/Civil/Mech./Auto/ECE-II/Prod/RAC/LT/FLT/TT/TD/KT/TP/Mechatronic/0104/2340/Dec'25
(For 2023 batch onwards)

Duration: 3Hrs.

M.Marks:50

SECTION-A

Q1. Do as directed any ten of the following.

10x1=10

- A hidden object is shown by _____ line.
- "SQ" written before a dimension denotes a _____.
- The size of trimmed A2 sheet is _____.
- Draw the symbol of electrical resistance.
- Section lines are generally drawn at an angle of _____ to the horizontal.
- The ratio of length on drawing and actual object length is called _____.
- Front view of an object is projected on _____ plane.
- A sectional view drawn after removing the front half portion of an object is _____ sectional view.
- The section lines drawn in an object cut by a cutting plane is called _____.
- An isometric view shows _____ surfaces of the objects.
- Protractor is an instrument for measuring angles. (T/F)
- The scale representing three units is called a plain scale. (T/F)

SECTION-B

Q2. Attempt any two questions.

2x10=20

- a) Draw the following in single stroke vertical capital letters in 7:4. Take letter height = 35mm.
"SCIENCE AND TECHNOLOGY"
b) Differentiate between 1st angle projection and 3rd angle projection.
- a) Explain the aligned and unidirectional system of dimensioning with diagram.
b) Construct a diagonal scale to read meters, decimetres and centimetres. RF= 1/40, long enough to measure upto 6 meters. Show on it a distance of 5 m 5 dm 6 cm and 3 m, 3 dm, 3 cm.
- a) Draw the conventional representation of various types of lines.
b) A line PQ is 60 mm long which is parallel to V.P. Line is 20 mm in front of VP and inclined at 45° to the H.P. Nearest end P of line is 20 mm above H.P. Draw its front view and top view.

SECTION-C

Q3. Attempt any one question.

1x20=20

- Draw the front view, top view and side view of the object shown in figure no. 1.
- Draw the following views of the "BRACKET" shown in figure no. 2.
 - Sectional front view by a plane X-X through centre.
 - Top view through B.
 - Also draw its side view.

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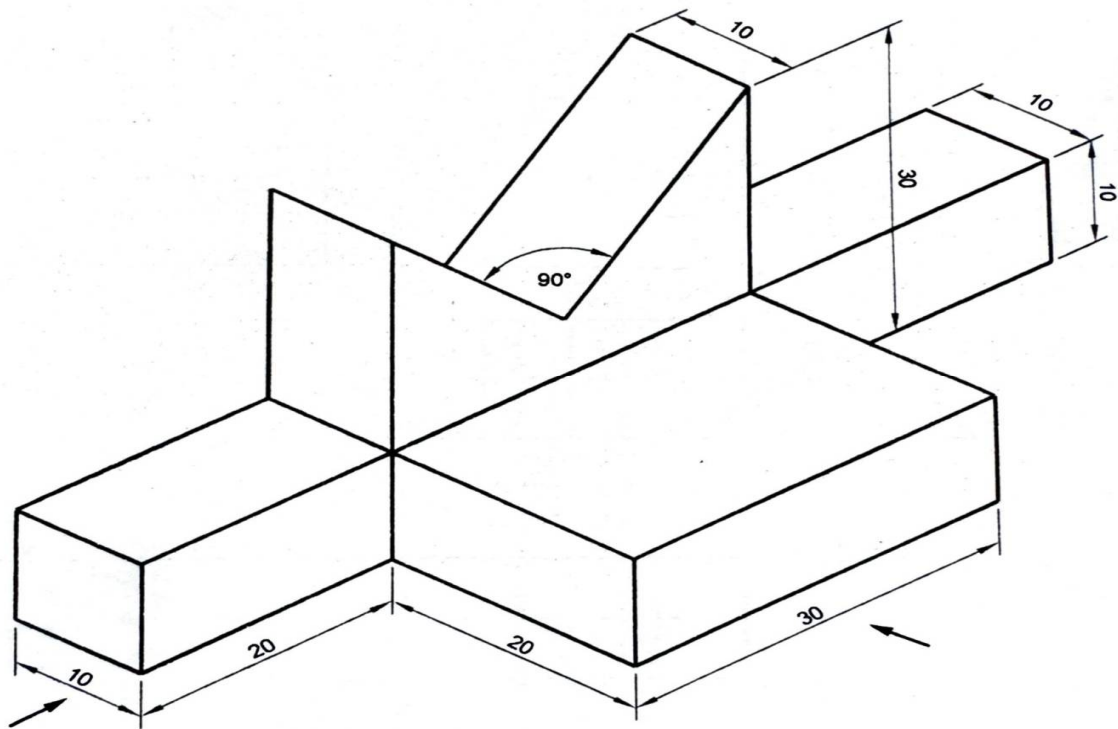


Figure no. 1

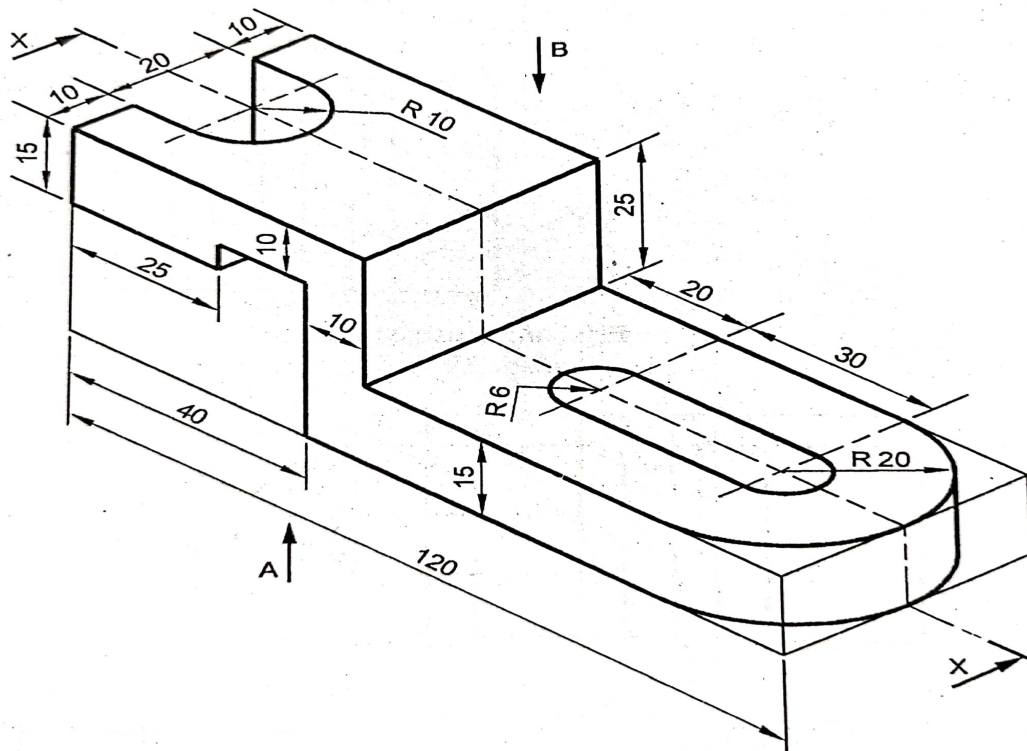


Figure no. 2

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ENGLISH AND COMMUNICATION SKILLS-I

1st Exam/Common/1200/Dec'25

(For 2025 Batch Onwards)

Duration: 3Hrs.

M.Marks:50

SECTION-A

Q1. a) Read the passage given below and answers the questions.

I am Harmanpreet Kaur, a cricketer known for my powerful batting skills. I was born on March, 8, 1989, in Moga, Punjab, India. Cricket has been my passion since childhood. In 2017, during the Women's Cricket World Cup semi-final match against Australia, I played an incredible innings, scoring 171 runs off just 115 balls. This great performance was highly praised and boosted the popularity of women's cricket in India. I am proud to represent my country, motivating young girls to chase their cricket dreams. **3x1=3**

i. Where was Harmanpreet Kaur born?

a) Moga, Punjab, India b) Ludhiana, Punjab, India c) Gobindgarh, Punjab d) Delhi, India

ii. Which sport does Harmanpreet Kaur excel in? a) Hockey b) Cricket c) Tennis d) Football

iii. Harmanpreet Kaur, a cricketer is known for her powerful _____ skills.

b) Answer the following questions in one or two sentences.

2x2=4

a. What impact did Harmanpreet Kaur's performance have on Women's cricket in India?

b. Which significant event took place during the Women's Cricket World Cup Semi-final match in 2017 involving Harmanpreet Kaur?

Q2. a) Read the passage and answers the questions.

Lila loved to visit her grandmother's house on weekends. Her grandmother lived in a small cottage near a forest. The house had a big garden filled with flowers of all colours. Lila's favourite flower was the yellow sunflower that always stood tall, reaching for the sun. One Saturday morning, Lila helped her grandmother water the plants and pick ripe tomatoes from the garden. Afterward, they baked a delicious tomato pie together. While the pie was baking, Lila listened to her grandmother tell stories about her childhood. Later that day, Lila and her grandmother went for a walk in the forest. They saw a deer drinking water from a small stream and heard birds chirping happily in the trees. Lila loved spending time with her grandmother and always looked forward to her visits. **6x1=6**

i. Where does Lila's grandmother live? a) Cottage b) Hut c) House d) Apartment

ii. Which is Lila's favourite flower? a) Rose b) Lily c) Tulip d) Sunflower

iii. What did Lila and her grandmother bake together? a) Cake b) Chocolate c) Tomato pie d) Bread

iv. The cottage is near a) Forest b) Pond c) Jungle d) Sea

v. Lila water the _____

vi. The house had a _____ garden.

b) Answer the following in one or two sentences.

2x2=4

a. What animal did Lila and her grandmother see in the forest?

b. Why does Lila enjoy visiting her grandmother?

SECTION-B

(Use of language)

Q3. Do as directed.

10x1=10

i. The cat sleeps peacefully on the soft rug. (Identify nouns & verbs)

ii. We can play outside _____ lunch. (before/after)

iii. We are having a party _____ Saturday (at/on)

iv. He _____ the guitar every evening. (play/plays)

v. The sun _____ in the morning. (rise/rises)

vi. She _____ brushes her teeth before going to bed. (usually/always)

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- vii. _____ Elephant a large animal. (a/ an/ the)
viii. He drank _____ coffee in the morning. (some / any)
ix. _____ Eiffel Tower is in Paris. (a/ an/ the)
x. The _____ boys refused to play. (Fill with the adjective)

Q4. Vocabulary.

6x1=6

a) Use any words from the box to fill in the blanks.

Boil, Coat, Cut

- i. _____ the onion into thin slices.
ii. _____ until the mixture gains a thick consistency.
iii. _____ the cleaned vegetables in the flour mixture.

b) Fill in the blanks with appropriate adjective from the backets.

- iv. The market is _____ and colourful (busy/ big)
v. His apartment is _____ with a nice view (old/ big)
vi. My bedroom is small but _____ (cozy/sparkling)

SECTION-C

Q5. Write a paragraph in about 125-150 words on any one of the topics using the hints given. 7

a) Trees

Trees best friends Important role no life without tree give wood
Timber Paper Medicines Add beauty of life Fresh oxygen Good health
..... Help control pollution Absorb carbon dioxide Give rainfall Try grow more trees.

OR

b) Diwali

Diwali festival of lights mark the victory of good over evil people clean and white wash
.....decorate with electric lights decorate with earthen lamps sweets Gifts to
relatives gifts to neighbours..... enjoy very much.

Q6. a) Complete the diary entry by filling in the blanks.

5

Date:

Day :

Time:

Todaymy birthday found two gifts next to my pillow Excited to see giftsmy
parents walked into my room.....wished me together opened gifts.....didn't go to school.....quickly
dressed..... Watch a film.....lunch at restaurant.....parents arrange surprise
party.....happy.....thanked all come back home night opened other gifts..... best
birthday ever.

b) Write 5 sentences on any topics.

5

My Hometown / City/ Village

OR

My Best Friend

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ENVIRONMENTAL STUDIES
1st Exam/ECE-II/CSE/IT/MOP/T&D/MECHATRONIC/0109/Dec'25
(For 2023 Batch Onwards)

Duration: 3Hrs.

M.Marks:50

SECTION-A

Q1. Do as directed any nine of the following.

9x1=9

- a. Living factors in the environment are called _____ factors.
- b. The outer mantle of solid earth is known as _____.
- c. The conversion of non-forest area into forest area is known as _____.
- d. AQI stands for _____.
- e. National Environment Appellate Authority Act was made in _____.
- f. EIA stands for _____.
- g. The periodic rise and fall of the water level of sea is called _____.
- h. Green building uses more water. (T/F)
- i. Gamma-rays does not cause radioactive pollution. (T/F)
- j. Geothermal energy is a renewable source of energy. (T/F)
- k. Global warming refers to an average increase in the earth's temperature. (T/F)
- l. DDT is an example of Biodegradable pollutant. (T/F)

SECTION-B

Q2. Attempt any five questions.

5x4=20

- i. What is deforestation? What are its causes?
- ii. Write a short note on Tidal energy.
- iii. Differentiate between Lentic and Lotic ecosystem.
- iv. Write a note on Greenhouse effect.
- v. What are the effects of Soil pollution?
- vi. Discuss the role of an individual in reduction of solid waste.
- vii. Give some impacts of Global warming.
- viii. What are general characteristics of an ecosystem?

SECTION-C

Q3. Attempt any three questions.

3x7=21

- a. What is Noise Pollution? Explain its causes and effects.
- b. Explain in detail the concept of Green Building.
- c. What are renewable sources of energy? Discuss with examples.
- d. What is Environmental Impact Assessment? Enlist its advantages and disadvantages.
- e. Explain the steps involved in Solid Waste Management.

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COMPUTER FUNDAMENTAL & INFORMATION TECHNOLOGY

1st Exam/CSE/IT/9500/Dec'25

(For 2023 Batch Onwards)

Duration: 3Hrs.

M.Marks:50

SECTION-A

Q1. Do as directed any nine of the following.

9x1=9

- Define Information Technology in one line.
- Expand GUI.
- ROM loses its contents when power is turned off. (T/F)
- Define Cache Memory in one line.
- The intersection of a row and a column is called a _____.
- Expand WYSIWYG.
- You installed antivirus to protect your system. This is an example of _____ software.
- Google Chrome is an example of a web browser. (True/ False)
- A shopkeeper wants to calculate the total sales of 30 days. He should use _____ function in Microsoft Excel.
- You want to explain a topic with pictures, animation, and sound. The best tool is _____
- A teacher wants to install Linux instead of Windows. Linux is a type of _____
- Write the formula to calculate average of cells A1 to A5.

SECTION-B

Q2. Attempt any five questions.

5x4=20

- Explain the importance of USB and HDMI Ports.
- Differentiate between Transitions and Animations with examples.
- Explain the role of Mail Merge in creating customized invitation letters.
- List any four areas where IT has improved our daily life
- Compare HDD and SSD with respect to speed, durability, and usage.
- Differentiate between System Software and Application Software with examples.
- Explain the importance of Charts in Excel with an example

SECTION-C

Q3. Attempt any three questions.

3x7=21

- You have to create a presentation on topic "Save Environment" with 5 slides. List the steps (need not to write for each slide) that you would follow to perform following:
 - Design Selection of Slides (1)
 - Text and Images (2)
 - Table and Charts (2)
 - Animations and Transitions (2)
- Explain how Excel can be used to create a monthly expense sheet (including necessary formulas) for a family with graphs.
- With the help of a neat block diagram, explain how a computer takes input from a keyboard and produces output on a printer.
- Compare PAN, LAN, MAN, and WAN using real-world example.
- With a diagram, explain the complete process of sending and receiving an email through the Internet. Include the role of SMTP, POP3/IMAP, ISP, and browser/email client in your explanation

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BASICS OF AUTOMOBILE ENGINEERING
1st Exam/Auto/9328/Dec'25
(For 2023 batch onwards)

Duration: 3Hrs.

M.Marks:50

SECTION-A

Q1. Do as directed any nine of the following.

9x1=9

- a. Fuel is burnt inside the cylinder is called _____ engine
- b. Clutch is fitted between _____ and _____
- c. Lubricating oil is used to _____ the friction between engine parts.
- d. Pistons are generally made of _____
- e. _____ type of system is used to cool the engine parts of Maruti Car.
- f. Connecting rod is fitted between _____ and _____
- g. Propeller shaft is attached to both ends by _____
- h. Motor cycles are generally air cooled engines. (T/F)
- i. Shock absorber is used in suspension system of vehicle. (T/F)
- j. Flywheel is attached to differential. (T/F)
- k. Hyundai cars are single cylinder engines. (T/F)
- l. Ignition coil is a part of cooling system. (T/F)

SECTION-B

Q2. Attempt any five questions.

5x4=20

- i. Discuss briefly about the suspension system.
- ii. Write the function and material of following. a) Cylinder Head b) Piston
- iii. Write the function and material of following. a) Connecting Rod b) Camshaft
- iv. Write the function of clutch and gearbox and where it is fitted?
- v. Discuss briefly about the lubrication system.
- vi. Discuss briefly about the ignition system.
- vii. Define engine and how do you classify engine on the basis of fuel and stroke.

SECTION-C

Q3. Attempt any three questions.

3x7=21

- a. Draw a layout of transmission system with neat diagram and label parts.
- b. Explain cooling system and lubrication system.
- c. Write the difference between petrol engine and diesel engine.
- d. Enlist any five manufactures of cars and write any two models of four cars.
- e. Write comparison between External Combustion Engine and Internal Combustion Engine.

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ENGINEERING PHYSICS
1st Exam/ECE-II/0111/Dec'25
(For 2025 Batch Onwards)

Duration: 3Hrs.

M.Marks:50

SECTION-A

Q1. Do as directed any nine of the following.

9x1=9

- i. The capacity of a body to do work is called_____
- ii. A magnetic field exerts no force on _____charge
- iii. A _____is a non-conducting material which separates the plates of a capacitor.
- iv. Post office box works on the principle of_____
- v. Battery used in invertors at home is a source of AC. (T/F)
- vi. A solenoid act as a bar magnet. (T/F)
- vii. Conveyer belts are made rough to increase friction. (T/F)
- viii. Diode can work as amplifier. (T/F)
- ix. Mention the use of Diode component.
- x. Define ferromagnetic materials.
- xi. Give one difference between p type and n type semi-conductor.
- xii. Why does a cyclist lean towards the inward direction while going on a curve?

SECTION-B

Q2. Attempt any five questions.

5x4=20

- a. Why it is easy to pull than to push a lawn roller?
- b. Friction is a necessary evil. Explain.
- c. A man weighing 50kg carries a load of 10kg on his head. Find the work done when he goes
i) 15m vertically up ii) 15m on a leveled path on the ground
- d. What are electric lines of forces? Give properties of electric lines of forces.
- e. Length of wire is halved, what will be the its conductance?
- f. State and explain Kirchhoff's law of electricity.
- g. What is a unit? Give characteristics of a standard unit.
- h. Give difference between centripetal force and centrifugal force.

SECTION-C

Q3. Attempt any three questions.

3x7= 21

- i. a) A body of mass (m) is moving with a uniform speed (v) in a circle of radius (r). Find an expression for centripetal force F by the method of dimensions. **5**
b) What are the laws of limiting friction? **2**
- ii. a) Explain with the help of a circuit diagram the working of a centrally tapped full wave rectifier. **5**
b) State principle of Wheat Stone Bridge? **2**
- iii. a) What are superconductors? Give examples of superconductors. **4**
b) Write down the factors affecting the capacitance of capacitor. **3**
- iv. a) Derive an expression for a) Potential energy b) Kinetic energy **5**
b) Define impulse and give its applications. **2**
- v. a) Write a short note on banking of roads. **4**
b) Give difference between intrinsic and extrinsic semi conductor. **3**

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INTRODUCTION TO CHEMICAL ENGINEERING

1st Exam/Chemical/5635/2331/Dec'25

(For 2023 Batch Onwards)

Duration: 3Hrs.

M.Marks:50

SECTION-A

Q1. Do as directed any nine of the following.

9x1=9

- a. Write the S.I unit of pressure
- b. What do you mean by the term normality
- c. Name any one unit process
- d. Define pressure
- e. Which factor is important in location of chemical industries
- f. _____ is the widely known as the father of the chemical engineering
- g. The ph value of water is _____
- h. What do you mean by weight fraction
- i. Define vacuum
- j. What are the types of fluid?
- k. Name three modes of heat transfer.
- l. Write unit of conductivity.

SECTION-B

Q2. Attempt any five questions.

5x4=20

- i. Define chemical engineering? discuss about the history of chemical engineering in India
- ii. What are the Scope and career opportunities in chemical engineering?
- iii. Convert 1000 mm Hg to psia, Kpa, atm
- iv. What are the Industrial applications of chemical engineering?
- v. What are the Classify various mass transfer operations?
- vi. Define the Concept of batch, semi-batch and continuous processes.
- vii. What is radiation type heat transfer?

SECTION-C

Q3. Attempt any three questions.

3x7=21

- a. Classify different types of equipments used in fluid flow, heat transfer and mass transfer
- b. Discuss about the various modes of heat transfer with example
- c. Explain the concept of mass transfer? What are the applications of mass transfer in chemical industries?
- d. What are the various unit processes and unit operations used in chemical engineering?
- e. What is the Difference between a Batch, semi-batch and continuous reactors?

S. B. Roll. No.....

BASIC DESIGN
1st Exam/GT/FD/7809/2357/Dec'25
(For 2023 Batch Onwards)

Duration: 3Hrs.

M.Marks:50

SECTION-A

Q1. Do as directed any nine of the following.

9x1=9

- a. Define design.
- b. Name primary colours.
- c. Write two warm colours.
- d. Name two elements of Design.
- e. We get _____ colours when we mix primary colours.
- f. Red is cool colours. (T/F)
- g. Vertical lines are suitable for short people. (T/F)
- h. Silhouette is a outer shape of garment. (T/F)
- i. We get orange colours when we mix red and yellow. (T/F)
- j. Define texture.
- k. Define colour.
- l. Define collage.

SECTION-B

Q2. Attempt any five questions.

5x4=20

- i. Describe different types of line.
- ii. Write difference between any two colour schemes.
- iii. Describe collage in detail.
- iv. Define optical illusion.
- v. Difference between warm and cool colours.
- vi. Write a note on texture.
- vii. Write about harmony and unity.

SECTION-C

Q3. Attempt any three questions.

3x7=21

- a. Describe elements of design? Explain with all details.
- b. Detailed note on Principal of design.
- c. What is optical illusion write types also.
- d. Define colours? Write importance of colour in Designing.
- e. Write all types of colour schemes.

S. B. Roll. No.....

BASIC DRAFTING & PATTERN MAKING-I
1st Exam/GT/FD/7830/Dec'25
(For 2023 Batch Onwards)

Duration: 3Hrs.

M.Marks:50

SECTION-A

Q1. Do as directed any nine of the following.

9x1=9

- Circular skirt is cut on ____ bias grain
- Which tool is used for curves?
- Basic pattern set is of 3 pieces (T/F)
- 41 inches are in one meter (T/f)
- Name Three Types of grain lines
- Tracing wheel is used for tucks marking. (T/F)
- Scale is used to measure a body size (T/F)
- Margin is not added in patterns (T/F)
- Collars are placed on widthwise grain (T/F)
- Define direct measurement
- Define apex
- Define flat pattern

SECTION-B

Q2. Attempt any five questions.

5x4=20

- What is indirect measurement?
- Explain advantages of Drafting.
- Describe any two pattern making tools
- What is bias and apex.
- Explain pattern manipulation.
- Define Term- Style number, patronize, dart
- What are vertical measurements?

SECTION-C

Q3. Attempt any three questions.

3x7=21

- Explain all types of taking measurements techniques.
- Write all pattern making tools.
- How do you explain classification of measurements?
- Describe importance of pattern making in fashion industry.
- Do any two of the following: i) cost sheet ii) grain lines iii) patterns drafting

S. B. Roll. No.....

GARMENT CONSTRUCTION-I
1st Exam/GT/FD/7839/Dec'25
(For 2023 Batch Onwards)

Duration: 3Hrs.

M.Marks:50

SECTION-A

Q1. Do as directed any nine of the following.

9x1=9

- Name two sewing tools.
- Define ironing'
- Which thread come during handling of fabric?
- Define plain seam.
- Grain line is most important part in _____.
- Stitched garment is not used for standard measurement. (T/F)
- Spreading of fabric is most important in cutting. (T/F)
- Circular skirt is cut on _____ grain.
- Shrinking process is not necessary for all types of fabrics. (T/F)
- Hooks and Buttons are used for opening. (T/F)
- Frills are also known as _____ also.
- When we join two fabrics through seam, we called it _____.

SECTION-B

Q2. Attempt any five questions.

5x4=20

- Write short note on seams.
- Write down about tucks.
- Explain sequence of cutting.
- Explain measurement tools.
- Explain ironing.
- Describe cutting Tools.
- What is marker making?

SECTION-C

Q3. Attempt any three questions.

3x7=21

- Explain preparation of fabric for cutting.
- Describe parts of sewing machine.
- Explain about straightening of fabric.
- Write about on pleats, knife pleats, inverted pleats.
- Detail notes on tools and equipment used in clothing construction.

S. B. Roll. No.....

ARCHITECTURAL DRAWING-I
1st Exam/AA/3828/Dec'25
(For 2023 Batch Onwards)

Duration: 3Hrs.

M.Marks:50

SECTION-A

Q1. Do as directed any ten of the following.

10x1=10

- a. Full size scale indicated as _____.
- b. An angle less than right angle known as _____.
- c. A point above HP & behind VP lies in _____ Quadrant.
- d. Length of scale = _____ x Max Length.
- e. Gothic letters have _____ thickness.
- f. _____ is used to drawing horizontal lines.
- g. Designation of enlarging scale is _____.
- h. 1st angle projection is _____ system.
- i. Dimensions of B0 Drawing board are _____.
- j. Dimension lines should not _____ each other.
- k. The hardest grade of pencil _____.
- l. The size of trimmed A1 sheet is _____.

SECTION-B

Q2. Attempt any two questions.

2x10=20

- i. Write the word 'CONVENTIONS' in single stock upper case gothic lettering of height 35mm in the ratio 7:4.
- ii. Draw the front view, top view, side view of a pentagonal prism with base 35mm and axis height 70mm.
- iii. Draw the projection of line AB 45mm long. The line is parallel to VP and perpendicular to HP.

SECTION-C

Q3. Attempt any one question.

1x20=20

- a. Develop the surface of square pyramid having the base edge 30mm and axis 70mm long.
- b. Draw the projection of following points.
 - i. Point A, 30mm above HP & 25mm in-front of VP.
 - ii. Point B, 35mm behind VP & 35mm below HP.
 - iii. Point C, 40mm behind VP & is in HP.
 - iv. Point D, lies both in HP & VP.

S. B. Roll. No.....

FREE HAND SKETCHING
1st Exam/AA/3829/Dec'25
(For 2023 Batch Onwards)

Duration: 3Hrs.

M.Marks:50

SECTION-A

Q1. Do as directed any four of the following.

4x5=20

- a. Colour and shade square pyramid and octagonal prism.
- b. Draw free hand sketch of a columnar tree.
- c. Sketch an old man walking with a stick.
- d. Make free hand drawing of a two-seater sofa.
- e. Draw cube and sphere showing shade and shadow.
- f. Make free hand sketch of a motorbike.

SECTION-B

Q2. Attempt any two questions.

2x15=30

- i. Make a composition with different patterns of lines in a box of 20cm x 14 cm.
- ii. Draw a public parking scene of a commercial area showing cars, motor bikes, human figures, trees and buildings.
- iii. Make a layout of a master bedroom of size 16'-0" x 12'-0" showing required furniture.

S. B. Roll. No.....

LIBRARY INFORMATION AND SOCIETY
1st Exam/LIS/2830/2380/Dec'25
(For 2023 Batch Onwards)

Duration: 3Hrs.

M.Marks:50

SECTION-A

Q1. Do as directed any nine of the following.

9x1=9

- a. Exhibition of books is related to the extension activities of the library. (T/F)
- b. Which is the third law of Library Science?
- c. The full name of S.R. Ranganathan_____
- d. Library cess is a source of income for_____
- e. Librarian Day is celebrated every year on_____
- f. Libraries are centres of self-study of learning. (T/F)
- g. The five laws of library science were enunciated by_____
- h. In which year Madras Library Act._____
- i. Academic Libraries consist of_____
- j. Mobile library is a kind of_____
- k. Place where books are issued to readers in Library Called_____
- l. Name of First law of Library Science.

SECTION-B

Q2. Write short notes on five of the following.

5x4=20

- i. Copyright
- ii. Digital Library.
- iii. Fourth law library Science.
- iv. National Library
- v. Purpose of Library
- vi. University Library
- vii. Objective of Public library

SECTION-C

Q3. Attempt any three questions.

3x7=21

- a. Discuss the concept of library in society & its role and function.
- b. Define the laws of Library Science by Dr. S.R. Ranganathan's.
- c. Define Special library & its objectives and functions.
- d. Write a brief note on history & Development of libraries.
- e. Define Library Legislation.

S. B. Roll. No.....

LIBRARY CATALOGUING-I
1st Exam/LIS/2835/2332/Dec'25
(For 2023 Batch Onwards)

Duration: 3Hrs.

M.Marks:50

SECTION-A

Q1. Give answer in one line any nine of the following.

9x1=9

- a. Who is regarded as father of library science in India?
- b. Which types of searches facilitated by OPAC?
- c. What is added entry?
- d. How many columns accession registers have?
- e. Which part of a book is main source of information for cataloguing?
- f. What is main entry?
- g. Full form of ISBN.
- h. What is call number?
- i. In which year AACR II was published?
- j. What is accession number?
- k. Who devised CCC?
- l. For what Cutter table is used?

SECTION-B

Q2. Write short note any five of the following.

5x4=20

- i. Structure of main entry according to AACR II.
- ii. Need of cataloguing
- iii. Advantages of Library Catalogue
- iv. Pseudonym Works
- v. History of Library Catalogue.
- vi. Alphabetical catalogue
- vii. Outer forms of catalogue.

SECTION-C

Q3. Attempt any three questions.

3x7=21

- a. Make a comparative study of different physical forms of a library catalogue.
- b. Explain the different kinds of catalogue entries according to AACR II
- c. Explain CCC.
- d. Write a detailed note on Sears's list of subject headings.
- e. Discuss the purpose, objectives and functions of a library catalogue.

S. B. Roll. No.....

LIBRARY CLASSIFICATION-I
1st Exam/LIS/2832/Dec'25
(For 2023 Batch Onwards)

Duration: 3Hrs.

M.Marks:50

SECTION-A

Q1. Do as directed any nine of the following.

9x1=9

- a. Which classification scheme is the oldest scheme of classification?
- b. How many main classes are there in DDC?
- c. Table two of DDC.
- d. Pure notation.
- e. Full form of DDC.
- f. _____ is the father of library science
- g. How many Tables are there in 23rd edition in DDC?
- h. DDC main class 500
- i. The aim of classification is to bring together like entities and separate unlike entities. (T/F)
- j. Who gave DDC?
- k. Fifth law of library science.
- l. Full form of UDC.

SECTION-B

Q2. Write short notes on any five of the following.

5x4=20

- i. Types of notation.
- ii. Call number.
- iii. Purpose of classification.
- iv. Data.
- v. Main classes in DDC.
- vi. Define Information
- vii. Need of notation.

SECTION-C

Q3. Attempt any three questions.

3x7=21

- a. What is knowledge? Write down difference between implicit and explicit knowledge.
- b. Discuss the salient features of UDC.
- c. What is notation? What are the qualities of good notation?
- d. Define library classification. Write down importance of library classification.
- e. Write down salient features of DDC.

S. B. Roll. No.....

STENOGRAPHY-I
1st Exam/MOP/8728/Dec'25
(For 2023 Batch Onwards)

Duration: 2Hrs.

M.Marks:20

SECTION-A

Q1. Fill in the blanks any four of the following.

4x1=4

- a. The short vowels are represented by a _____ and _____.
- b. The stroke representing Chay is written _____.
- c. The sign of diphthong 'i' is written in the _____ place.
- d. Total numbers of consonants in English shorthand are _____ only.
- e. Finally _____ form is used of R if no vowel follows.
- f. Third place vowel-signs are written _____ the second stroke.

SECTION-B

Q2. Attempt any four questions.

4x2=8

- a. Write about the short vowels.
- b. Give outline of any 4 phrases along with their transcription
- c. Write the name of consonants and their characters.
- d. Differentiate between Chay and Ray.
- e. What do you know about the alternate form of H? Explain with examples.
- f. What do you understand by logograms and grammalogues?

SECTION-C

Q3. Attempt any two questions.

2x4=8

- a. What should be sitting position of stenographer?
- b. Write a detailed note on vowels? Explain their signs and placement with examples.
- c. Explain the position of outlines?

S. B. Roll. No.....

OFFICE MANAGEMENT
1st Exam/MOP/8727/Dec'25
(For 2023 Batch Onwards)

Duration: 3Hrs.

M.Marks:50

SECTION-A

Q1. Do as directed any nine of the following.

9x1=9

- a. An ____ is a place where control mechanism of an organization is located.
- b. An office is to a ____ what a mainspring is to a watch.
- c. Arranging and storing information in a systematic way is called ____.
- d. A ____ is a printed piece of paper used to collect information.
- e. ____ and ____ are two stationary items.
- f. ____ reduces the chances of fraud.
- g. Office work is unproductive. (T/F)
- h. The most common method to purchase stationary is through quotation. (T/F)
- i. Automation decreases the speed of office work. (T/F)
- j. Foot candle is the unit to measure the quantity of light. (T/F)
- k. Book index is also called leaf index. (T/F)
- l. Physical concentration of activities into a single group under one manager is called decentralization of services. (T/F)

SECTION-B

Q2. Attempt any five questions.

5x4=20

- i. Explain any two working facilities needed in an office.
- ii. Explain purchase procedure for stationary items.
- iii. Write any two methods of filing.
- iv. What is the importance of an office?
- v. Write a short note on GEM.
- vi. Write a short note on e-office.
- vii. Explain various types of office forms.

SECTION-C

Q3. Attempt any three questions.

3x7=21

- a. Write the functions of an office in detail.
- b. What is Filing? Write in detail the essentials of a good filing system.
- c. What do you mean by office records? Explain types of records.
- d. Explain classification of files in detail.
- e. What is office automation? What are its advantages to an office?

S. B. Roll. No.....

BASIC CHEMISTRY
1st Exam/MLT/7920/Dec'25
(For 2023 Batch Onwards)

Duration: 3Hrs.

M.Marks:50

SECTION-A

Q1. Multiple choice questions any nine of the following.

9x1=9

- i. 3D space around nucleus where probability of finding electron maximum is called
a) Orbit b) Orbital c) Neutron d) Lane
- ii. Number of electrons in oxygen a) 8 b) 7 c) 16 d) 9
- iii. Subatomic particle with negative charge is a) Proton b) Neutron c) electron d) gamma particle
- iv. Atom of same element with mass number but different atomic number
a) Isobars b) Isotopes c) Isoelectronic d) Isodiaphers
- v. Bases have pH a) Less than 7 b) More than 7 c) equal to 7 d) none of the above
- vi. Acidic buffer is made of a) Weak base and salt of weak base b) Weak acid and salt of weak acid
c) Salt of weak acid weak base d) both B and C
- vii. Time in which radioactive substance decays 50 % is a) Half life b) Average life c) nth life d) Infinite
- viii. Colour of visible light with longest wavelength a) red b) green c) orange d) blue
- ix. Number of particles in 1 mole of substance a) 6.022×10^{23} b) 4×10^{23} c) 8×10^{23} d) 9×10^{23}
- x. Bond formed by headon overlap of atomic orbitals
a) Pi bond b) sigma bond c) Ionic bond d) None of the above
- xi. The bond formed by transfer of electron
a) Ionic bond b) Covalent bond c) Co-ordinate bond d) both B and C
- xii. S orbitals are of a) 3 types b) 1 type c) 5 types d) 7 types

SECTION-B

Q2. Attempt any five questions.

5x4=20

- a. Differentiate between Hard and soft water.
- b. State and explain Pauli Exclusion Principle.
- c. Calculate the pH of 0.01M NaOH.
- d. Differentiate between orbit and orbital.
- e. Differentiate between sigma and pi bond.
- f. Explain lamberts beers law.
- g. Differentiate between Physical and chemical adsorption.

SECTION-C

Attempt any three questions.

3x7=21

- Q3.** a) What are the main postulates of Bohr's atomic model? Give its limitations. **5**
b) Write electronic configuration of Copper and Chromium? **2**
- Q4.** a) Define osmosis, diffusion and reverse osmosis? **5**
b) Define electromagnetic spectrum? **2**
- Q5.** a) What is buffer? Give its types and explain acidic buffer. **5**
b) pH of 0.01 M NaOH **2**
- Q6.** a) Define electrolysis. Explain electrolysis with help of NaCl. **5**
b) Define radioactive substances, **2**
- Q7.** a) What are Redox reactions? Explain with example? **5**
b) Define molarity and molality? **2**

S. B. Roll. No.....

CLINICAL BIOCHEMISTRY-I
1st Exam/MLT/7929/Dec'25
(For 2023 Batch Onwards)

Duration: 3Hrs.

M.Marks:50

SECTION-A

Q1. Fill in the blanks any nine of the following.

9x1=9

- a. EDTA stands for _____.
- b. _____ Glassware is resistant to heat.
- c. RPM stands for _____.
- d. PFF stands for _____.
- e. Flame photometer is used for the determination of _____.
- f. Chromic acid is used for _____.
- g. _____ instrument is used to measure the specific gravity of urine.
- h. _____ is natural anticoagulant.
- i. _____ is obtained from coagulated blood
- j. _____ is used to disinfect the puncture site.
- k. Centrifuge is based on the principle of _____.
- l. Glucometer is used for _____.

SECTION-B

Q2. Attempt any five questions.

5x4=20

- i. What is the importance of studying Biochemistry?
- ii. Write down the differences between colorimeter and spectrophotometer.
- iii. Write a note on glucometer.
- iv. Describe the preparation of PFF.
- v. Write a short note on any 3 protein precipitating agents.
- vi. Write a note on Hot air oven and water bath
- vii. Write a note on collection of urine sample

SECTION-C

Q3. Attempt any three questions.

3x7=21

- a. What is the principle of centrifuge? Explain its parts, types and use.
- b. What are anticoagulants? Explain types of anticoagulants with their uses.
- c. Write down the requirements and procedure for collection of blood sample by vein puncture method.
- d. Write down the requirements and procedure to separate plasma and serum from blood.
- e. Explain the cleaning procedure of glassware in Biochemistry Lab.

S. B. Roll. No.....

CLINICAL MICROBIOLOGY-I
1st Exam/MLT/7927/Dec'25
(For 2023 Batch Onwards)

Duration: 3Hrs.

M.Marks:50

Note. Draw diagram wherever necessary.

SECTION-A

Q1. Fill in the blanks any nine of the following.

9x1=9

- In prokaryotes, _____ term is used in place of nucleus.
- Filter sterilization is used to sterilize _____ materials.
- The ability of the lens of microscope to distinguish two closely spaced points as separate points is known as _____.
- The culture media without agar is known as _____ culture.
- Zig zag streaking is example of _____ plating/culturing technique.
- If power of eye piece is 10X and power of objective lens is 45X, the magnification will be _____ X.
- Carry blair/Stuart medium is example of _____ medium.
- The infection which occurs for the first time is called _____ infection.
- Membrane bound organelles are _____ in prokaryotes.
- _____ term is used for killing microbes on non living surfaces.
- Obligatory relationship in which both the organisms are benefitted is known as _____.
- Hot air oven is used for _____.

SECTION-B

Q2. Attempt any five questions.

5x4=20

- What are nosocomial infections? Discuss their three types.
- Differentiate between sterilization and disinfectants.
- Enlist five important differences between prokaryotes and eukaryotes.
- Discuss various types of plating techniques.
- Draw well labelled diagram of compound microscope.
- Define. a) Synthetic media b) anaerobic culture
- Write a note on chemical methods of sterilization.

SECTION-C

Q3. Attempt any three questions.

3x7=21

- What is culture media? Explain routinely used media in lab.
- What is sterilization? Discuss heat sterilization in details.
- What are infections? Discuss their types and sources.
- Attempt the following: i) Branches of Microbiology. ii) Safety guidelines in microbiology lab.
- Attempt the following: i) Antiseptics and their uses. ii) Prevention of nosocomial infections.

S. B. Roll. No.....

HAEMATOLOGY-I
1st Exam/MLT/7928/Dec'25
(For 2023 Batch Onwards)

Duration: 3Hrs.

M.Marks:50

SECTION-A

Q1. Fill in the blanks any nine of the following.

9x1=9

- a. _____ is example of volumetric glassware.
- b. A powerful calcium chelating agent is _____.
- c. _____ is used as disinfectant to clean the puncture site.
- d. Eyepiece and objectives are parts of _____.
- e. TLC stands for _____.
- f. WBC stands for _____.
- g. PBF stands for _____.
- h. RPM stands for _____.
- i. _____ Blood cells provide immunity.
- j. Giemsa is an example of _____ stain.
- k. _____ are immature RBC.
- l. _____ method is used when large amount of blood sample is required for the test.

SECTION-B

Q2. Attempt any five questions.

5x4=20

- i. What is the role of technician in infection control in lab?
- ii. Write down the characteristics of good thin blood film.
- iii. Briefly explain water bath and hot air oven
- iv. Write down the functions of blood.
- v. Write a note on EDTA and Trisodium citrate anticoagulant.
- vi. Write down the principle of Romanowsky stains? Name them.
- vii. What is the principle of centrifuge? Explain its parts and types

SECTION-C

Q3. Attempt any three questions.

3x7=21

- a. Explain various parts of microscope with diagram.
- b. Explain requirements and procedure of capillary puncture.
- c. Explain procedure to prepare a thin blood film?
- d. What are anticoagulants? Explain types of anticoagulants with examples
- e. Explain erythropoiesis with the help of diagram.

S. B. Roll. No.....

ANATOMY AND PHYSIOLOGY-I
1st Exam/MLT/7926/2358/Dec'25
(For 2023 Batch Onwards)

Duration: 3Hrs.

M.Marks:50

SECTION-A

Q1. Fill in the blanks any nine of the following.

9x1=9

- a. The study of tissue is called_____
- b. BMR stands for_____
- c. Nephron is the unit of_____
- d. Gall bladder is _____ shaped.
- e. Vitamin C is _____soluble vitamin.
- f. _____is the most superficial part of skin.
- g. Anatomy is the study of_____
- h. Platelets help in _____of blood.
- i. TSH stands for_____
- j. Right lung has _____number of bones.
- k. Total number of bones present in the human body are_____
- l. Cardiac muscles is present in walls of_____

SECTION-B

Q2. Attempt any five questions.

5x4=20

- i. Define the terms Anatomy and Physiology.
- ii. Draw a well labelled diagram of cell.
- iii. Define respiration.
- iv. Write a short note on BMR.
- v. Draw a well labelled diagram of urinary system.
- vi. Define vitamins and minerals by giving the example.
- vii. Draw a well labelled diagram of skin.

SECTION-C

Q3. Attempt any three questions.

3x7=21

- a. Define tissues? Write classification of tissues.
- b. Describe the various parts of digestive system along with diagram.
- c. What is Respiration? Explain in detail the mechanism of Respiration.
- d. Describe the composition and function of blood.
- e. Explain in detail about fat and water soluble vitamins.

S. B. Roll. No.....

BASICS OF DESIGN
1st Exam/IDD/8400/2388/Dec'25
(For 2023 Batch Onwards)

Duration: 3Hrs.

M.Marks:50

Note: Attempt all the questions and Support your answers with appropriate sketches.

SECTION-A

Q1. a) State whether the below are True/False. (any four)

4+4+2=10

- i. Kashmiri artisans prepare various articles to be used for decorative purpose only.
- ii. Contrast colours are opposite colours on a colour wheel.
- iii. Rangoli design is created on the surface of walls.
- iv. The Madhubani painting is done only by women folk of Darbhanga district.
- v. Tints and shades of Greys come under primary colour scheme.

b) Complete the sentences. (any four)

- vi. The Anthropometry is study of _____
- vii. By mixing two primary colours we get _____
- viii. Hot colours are _____
- ix. Shades of any colour are prepared by mixing _____
- x. Cool colours are _____

c) Depict the following with simple drawings and dimensions:

- xi. The average heights and widths of various body parts of the body in relation to space planning and joinery.
- xii. The height of a medium use work bench and its space allocated for the front of the foot to fit under the bench.

SECTION-B

Q2. Write short notes any two of the following.

2x10=20

- a. Psychological effects of colour RED ,BLUE ,YELLOW & WHITE
- b. Types of traditional Indian folk themes
- c. Elements of design

SECTION-C

Q3. Attempt any one question.

1x20=20

- i. Draw a colour wheel in detail showing primary , secondary and intermediary colours
- ii. Using soft colours along with various types of abstract shapes, draw a composition for a reception area in a commercial space - .Size 6'X4'

S. B. Roll. No.....

FUNDAMENTALS OF FURNITURE DESIGN
1st Exam/IDD/8404/Dec'25
(For 2023 Batch Onwards)

Duration: 3Hrs.

M.Marks:50

SECTION-A

Q1. Do as directed any nine of the following.

9x1=9

- a. Name any one famous furniture of Egyptian period?
- b. Name two fabrics which are used as upholstery in furniture?
- c. Name two types of woods which are used in furniture?
- d. What is Full form of HDF?
- e. What are modular furniture?
- f. What are built in wardrobes?
- g. _____ is an element of furniture Design.
- h. What is Anthropometry?
- i. What are the sizes of Double bed?
- j. Define corporate furniture?
- k. _____ is an eco-friendly material used in furniture.
- l. Is unity a principle of furniture design? (T/F)

SECTION-B

Q2. Attempt any five questions.

5x4=20

- i. What are the characteristics of Gothic Furniture?
- ii. Draw free hand sketch of a Double bed with side table.
- iii. Explain importance of furniture in Interior Design.
- iv. Draw free hand sketch of a three seater sofa.
- v. What are the environmental conditions influencing Furniture Design?
- vi. What are the types of furniture used in interiors?
- vii. Draw freehand sketch of a Crockery cabinet.

SECTION-C

Q3. Attempt any three questions.

3x7=21

- a. Differentiate between French and English Furniture.
- b. Differentiate between Movable and Modular Furniture with examples.
- c. What are the factors affecting designing of furniture?
- d. Explain in detail the characteristics features of Egyptian period furniture.
- e. Explain in detail the basic elements and Principles of Furniture Design.

S. B. Roll. No.....

BUILDING MATERIALS
1stExam/IDD/8407/Dec'25
(For 2023 Batch Onwards)

Duration: 3Hrs.

M.Marks:50

SECTION-A

Q1. Do as directed any nine of the following.

9x1=9

- a. When a brick is cut half lengthwise then so cut brick is known as _____.
- b. The standard size of a brick is _____.
- c. The tiles used on floor are called floor tiles. (T/F)
- d. Name any two types of materials for roof furnishing.
- e. R.C.C. stands for _____.
- f. Concrete is a mixture of cement, water, sand and _____.
- g. Name any two types of plastics.
- h. M.S. Pipe stands for _____.
- i. In applying the whitewash on the wall, the surface should not be very smooth. (T/F)
- j. Basic components of water based paint are _____.
- k. Uses of brass in interior.
- l. Name any two types of plaster finish.

SECTION-B

Q2. Write short notes any five of the following.

5x4=20

- i. Emulsions.
- ii. Characteristics of good brick.
- iii. Properties of glass.
- iv. Properties of cement mortar.
- v. Properties of plastics.
- vi. Properties of stone.
- vii. Water Cement Ratio

SECTION-C

Q3. Attempt any three questions.

3x7=21

- a. Write down the characteristics and uses of common Indian timbers.
- b. Write down the types, properties and uses of cement.
- c. Explain defects in plaster and write down the uses of plaster in interiors.
- d. Write down the different types of bricks used in masonry and also write down their properties, uses and availability.
- e. Write down the defects and treatment of wood.

S. B. Roll. No.....

GRAPHIC PRESENTATION-I
1st Exam/IDD/8406/2389/Dec'25
(For 2023 Batch Onwards)

Duration: 3Hrs.

M.Marks:50

SECTION-A

Q1. Do as directed any ten of the following.

10x1=10

- a. Draw Centre Line.
- b. Explain a method of enlargement with the help of a figure.
- c. Draw a rectangle and dimension it.
- d. Draw an angle of 30° and dimension it.
- e. Draw the conventional symbol of Brick.
- f. What shape is the elevation of a cylinder?
- g. How many faces does a cube have?
- h. Draw the conventional symbol of sliding door.
- i. Draw a candle stand for an interior space.
- j. Draw the conventional symbol of sink
- k. Draw the conventional symbol of ceiling fan.
- l. Draw an indoor plant.

SECTION-B

Q2. Attempt any two questions.

2x10=20

- i. Draw the plan and elevation of a CYLINDER with base radius 3 c.m. and height 12 c.m.
- ii. Draw the horizontal section of a solid CUBE with side 6 c.m.
- iii. Write '**GRAPHIC PRESENTATION**' in the height of 1 c.m.

SECTION-C

Q3. Draw plan and elevations of any one of the following.

1x20=20

- a. Chair
- b. Table

***use appropriate scale**

S. B. Roll. No.....

HISTORY OF ART & CULTURE
1st Exam/IDD/8403/Dec'25
(For 2023 Batch Onwards)

Duration: 3Hrs.

M.Marks:50

Attempt all the questions and Support your answer with appropriate sketches

SECTION-A

Q1. Do as directed any nine of the following.

9x1=9

- Meenakari is a type of craft done on _____
- Traditional folk art from Maharashtra is known as _____ art done on walls
- Kangra style of miniature _____ is famous for its depiction of nature.
- In west Bengal _____ is drawn on floor by women during Makar-Sakranti.
- Handicrafts are of three types known as religious, utility & _____
- The light weight colourful handicrafts from Kashmir are called _____ work.
- Terracotta is the term used for handicraft known as _____
- All Indian handicrafts are always of same size, shape and material. (T/F)
- Kashmiri artisans use soft walnut wood for preparing carved objects of handicraft. (T/F)
- Kolam is created on ceilings by women folk as part of devotion in south India. (T/F)
- Lamps of all types are produced at large as part of religious type of handicraft. (T/F)
- Ajanta and Ellora caves are famous for its paintings & wall frescos. (T/F)

SECTION-B

Q2. Write short notes any five of the following.

5x4=20

- Tantric style of art
- Madhubani painting
- Handmade Floor coverings from Kashmir
- Miniature painting from Rajasthan.
- Handicrafts from Baster.
- Kalamkari style of work on textile
- Bidri metal art work

SECTION-C

Q3. Attempt any three questions.

3x7=21

- Write about the Types of traditional painting styles done in different parts of India?
- What do you know about types of Handicrafts of India? Explain.
- "Taj Mahel a beauty in white marble" Justify the term.
- What do you know about the traditional Indian floor designs and its types, used as decorations?
- Write in detail about Tanjore painting, its theme, style and material used.

S. B. Roll. No.....

APPLIED PHYSICS
1st Exam/T&D/4902/Dec'25
(For 2024 Batch Onwards)

Duration: 3Hrs.

M.Marks:100

SECTION-A

Q1. a) Fill in the blanks.

20x1=20

- i. SI unit of Temperature is _____.
- ii. Speed is a _____ quantity and velocity is a _____ quantity.
- iii. Rolling friction is _____ as compared to sliding friction.
- iv. One horse power = _____ watt.
- v. Heat flow is due to difference in _____ of two bodies.
- vi. The device used to measure current is _____.
- vii. Sound is a _____ wave.
- viii. _____ mirror is used as a rear-view mirror in vehicles.
- ix. A capacitor is used to pass signals _____ in electronics signal.
- x. Dimensional formula of force is _____.

b) State True or False.

- xi. Iron is a ferromagnetic material.
- xii. Banking of roads is done to balance the weight of the vehicle.
- xiii. Decibel is a measure of loudness of sound.
- xiv. Ruby laser is a threelevel laser.
- xv. Waves of frequency less than 20,000 Hz are called ultrasonic.

c) Multiple Choice Questions:

- xvi. The velocity of sound is maximum in : a) water b) air c) steel d) vacuum
- xvii. Which of the following is not a unit of pressure? a) Torr b) Bar c) N/m² d) Tesla
- xviii. Rate of change of momentum is directly proportional to:
a) force b) displacement c) acceleration d) velocity
- xix. B.O.T. (Board of Trade) unit is the unit for measuring
a) Electric power b) electric current c) electric energy consumed d) electric potential
- xx. Mirage is a phenomenon due to _____ of light.
a) Refraction b) reflection c) total internal reflection d) diffraction

SECTION-B

Q2. Attempt any eight questions.

8x5=40

- a. Convert one joule of energy into erg by using dimensional analysis.
- b. What do you mean by banking of roads? What is the need of banking of roads?
- c. What are three modes of transfer of heat? Explain briefly.
- d. State and explain laws of reflection with neat and labelled diagram.
- e. Define electric lines of force. Write properties of electric lines of force.
- f. What do you mean by scalars and vectors? Give examples.
- g. What will be the velocity of a body having mass 1 kg and kinetic energy 1 J?
- h. Difference between Transverse waves and longitudinal waves.
- i. State and explain Kirchhoff's Laws of electricity.
- j. What is LASER? Write the characteristics of LASER.

SECTION-C

Q3. Attempt any four questions.

4x10=40

- i. Explain free, forced and resonant vibrations with examples.

S. B. Roll. No.....

- ii. Explain principle, construction and working of a ruby laser.
- iii. Derive an expression of the three resistances R_1 , R_2 , R_3 are connected in series combination.
- iv. Prove that mechanical energy of a freely falling body remains constant.
- v. State and explain Ohm's law. Also give its experimental verification.
- vi. State and explain principle of homogeneity. Check the accuracy of relation $= 2\pi\sqrt{l/g}$, where the letters have their usual meaning.

Previous QP Dec 2025

S. B. Roll. No.....

ENGINEERING DRAWING
1st Exam/T&D/4904/Dec'25
(For 2024 Batch Onwards)

Duration: 4Hrs.

M.Marks:100

Note: Assume any missing/unreadable dimension with a suitable dimension.

SECTION-A

Q1. Fill in the blanks.

10x2=20

- a. In 7:4 ratio letterings the height is taken as _____ units.
- b. Top view is also known as _____.
- c. A radius is denoted by _____.
- d. The center line is used to show _____.
- e. The ratio of drawing to object is called _____.
- f. Front view lies above H.P. in _____ Quadrant.
- g. Top view and side view are given _____ can be drawn.
- h. Wooden members joined together are called _____.
- i. Riveting produces a _____ joint.
- j. The height of hexagonal nut is equal to _____.

SECTION-B

Q2. Attempt any four questions.

4x10=40

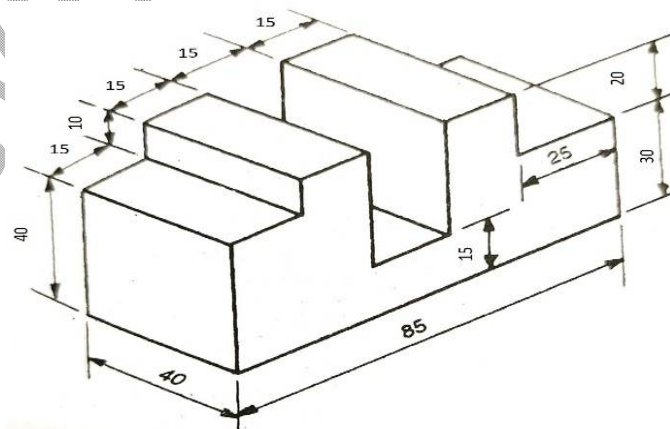
- i. Draw the symbols representing the following materials:-Wood, copper, earth, concrete.
- ii. What is difference between First angle projection and third angle projection?
- iii. Write free hand in 7:4 and height of letters 12mm "GROW MORE FOOD".
- iv. Draw a plain scale showing 1cm = 500 meters to read kilometers and hectometers. Show on distance of 9 km-7hm, 6.2 km and 6 hm.
- v. Draw three views of a hexagonal headed bolt of 24 mm diameter and 80 mm long with a hexagonal nut.
- vi. Draw the two orthographic views of Wood-ruff key.

SECTION-C

Q3. Attempt any two questions.

2x20=40

- a. Draw the isometric projections of a square prism side 25mm and height 50mm.
- b. A line AB, 60 mm long has its end B 20mm away from HP and 40mm away from VP. The line is parallel to both the principle planes. Draw its projections in all the four quadrants.
- c. Figure shows the pictorial view of an object. Draw its front, top and side view in 1st angle projection.(all dimensions in mm)



S. B. Roll. No.....

ENGLISH & COMMUNICATION SKILLS

1st Exam/T&D/4900/Dec'25

(For 2024 Batch Onwards)

Duration: 3Hrs.

M.Marks:100

SECTION-A

Q1. a) Fill in the blanks.

10x1=10

- i. Give the antonym of the word "success" _____.
- ii. "He said, 'I am tired.'" → Change into indirect speech: _____.
- iii. The plural of *child* is _____.
- iv. a person who writes poems is _____. (Give one word substitution)
- v. Delhi is _____ capital of India. (Insert suitable article)

b) State True or False.

- vi. Grapevine communication is always formal.
- vii. The past tense of *go* is *went*.
- viii. Subject and verb must always agree in number.
- ix. Minutes of meeting are written in past tense.
- x. An agenda lists the business to be discussed in a meeting.

Q2. Choose the correct option.

5x2=10

- i. The opposite of *active voice* is:
a) Passive voice b) Indirect speech c) Direct speech d) Reported speech
- ii. "Where the Mind is Without Fear" is written by:
a) R.K. Narayan b) Rabindranath Tagore c) William Wordsworth d) Robert Frost
- iii. Which is *not* a barrier to communication?
a) Noise b) Attitude c) Clear language d) Cultural differences
- iv. The correct spelling is:
a) Communcation b) Communication c) Comminucation d) Communacation
- v. A press release is mainly meant for:
a) Newspapers b) Exams c) Diaries d) Poetry

SECTION-B

Q3. Read the passage carefully and answer the questions that follow.

4x2=8

"Education is the most powerful weapon which you can use to change the world. It improves knowledge, skills and develops confidence. A nation with educated citizens is stronger and progressive."

- a. What is called the most powerful weapon?
- b. How does education help a person?
- c. What does an educated nation become?
- d. Suggest a suitable title for the passage.

Q4. Write a short note on Barriers to Communication and how they can be overcome.

8

Q5. Correct the following sentences.

2x2=4

- i. The girls are dancing.
- ii. The sun rise in the west.

Q6. Change the following into passive voice:

2x2=4

- a. They are watching a movie.
- b. Mohan will finish the work.

Q7. Write a short note on *Listening Skills* and their importance in communication.

8

Q8. Explain the central idea of any one of the following poems:

8

- i. "Daffodils" by William Wordsworth
- ii. "Stopping by Woods on a Snowy Evening" by Robert Frost

S. B. Roll. No.....

SECTION-C

Q9. Attempt any two questions.

2x20=40

- a. Write a letter to the Principal of your Polytechnic requesting permission to organize a cultural fest.
- b. Draft a report on "The Importance of Road Safety Awareness Camp" organized in your college.
- c. Write an essay on any one of the following topics: i) Importance of Communication Skills for Engineers ii) Role of Technology in Education iii) Value of Discipline in Student Life
- d. Attempt a character sketch of Abraham Lincoln as seen in his letter to his son's headmaster.

Previous QP Dec 2023

S. B. Roll. No.....

WORKSHOP TECHNOLOGY FOR TOOL & DIE-I
1st Exam/T&D/4903/Dec'25
(For 2024 Batch Onwards)

Duration: 3Hrs.

M.Marks:100

SECTION-A

Q1. Fill in the blanks.

10x2=20

- a. _____ is the process of joining metals using a filler metal with a lower melting point than the base metals.
- b. A _____ is used to measure internal and external dimensions with high precision.
- c. The part of the lathe that holds and rotates the work piece is called the _____.
- d. In drilling, the tool used to enlarge a hole slightly and improve its finish is called a _____.
- e. _____ saw is a power-driven tool used for straight cutting operations in metals.
- f. The cutting tool in a shaper performs _____ motion.
- g. A _____ is used to cut keyways and slots in cylindrical work pieces.
- h. The angle plate is commonly used as a _____ device on a drilling machine.
- i. A _____ is used for precision measurement of angles.
- j. In milling operations, _____ is the rate at which the work piece advances under the cutter.

SECTION-B

Q2. Attempt any five questions.

8x5=40

- i. Differentiate between soldering, brazing, and arc welding pr with neat diagrams.
- ii. Describe various types of files and their applications in metal working.
- iii. Explain the construction and working of a radial drilling machine.
- iv. Write a short note on pedestal grinder. Describe its parts and uses.
- v. Explain the working principle of slotting machine and its applications.
- vi. Describe various cutting tools and holders used on a center lathe.
- vii. What are the different types of cutting tools used in a milling machine?

SECTION-C

Q3. Attempt any two questions.

2x20=40

- a. **Explain in detail** the different types of measuring instruments used in workshop practice. Also discuss their applications and classification with neat sketches.
- b. Describe the construction, working, tools, operations, and cutting parameters of a **horizontal and vertical milling machine**. Also explain the safety precautions involved.
- c. **With the help of diagrams**, explain the different types of **lathe machines** (Centre Lathe, Capstan, Turret Lathe). Discuss their operations.

S. B. Roll. No.....

APPLIED MATHEMATICS
1st Exam/T&D/4901/Dec'25

Duration: 3Hrs.

M.Marks:100

NOTE: Attempt any five questions, selecting at least two from each section. All questions carry equal marks.

5x20=100

SECTION-A

Q1. a) Solve the system of equations by Crammer's rule:

$$7x - 12y + 5z = -18$$

$$3x + 8y - 2z = 40$$

$$10x - 7y + 4z = 11$$

b) Evaluate: (a) $A + B$ (b) $A - B$ (c) $2A - 3B$

$$A = \begin{bmatrix} 2 & -5 & 7 \\ -3 & 4 & 6 \\ 1 & 8 & -5 \end{bmatrix} \quad B = \begin{bmatrix} 8 & 1 & -3 \\ 2 & -9 & 2 \\ -4 & 5 & 6 \end{bmatrix}$$

Q2. a) Prove that $\cos^2 \frac{\pi}{8} + \cos^2 \frac{3\pi}{8} + \cos^2 \frac{5\pi}{8} + \cos^2 \frac{7\pi}{8} = 2$

b) From the top of the cliff 80 metres high, a man observes the angle of depression of a boat to be 30° , determine the distance of the boat from the foot of the cliff.

Q3. a) Prove that $\cos 20^\circ \cos 40^\circ \cos 60^\circ \cos 80^\circ = \frac{1}{16}$

b) Prove by using trigonometric formula that: $\tan 65^\circ = \tan 25^\circ + 2\tan 40^\circ$

Q4. a) Find the angle between the two straight lines $3x + y + 12 = 0$ and $x + 2y - 1 = 0$.

b) Find the equation of the circle passing through the points (0,0), (2,0) and (0,4). Find the co-ordinates of its centre and its radius.

SECTION-B

Q5. a) Evaluate $\int x \sin x dx$

b) Find the maximum and minimum values of the function $2x^3 - 21x^2 + 36x - 20$.

Q6. a) Differentiate $(\sin x)^{\tan x}$ with respect to x .

b) Find the equation of a tangent to the curve $y = be^{x/a}$ at the point where it cuts the y-axis.

Q7. a) If $x = \frac{1-t^2}{1+t^2}$ and $y = \frac{2t}{1+t^2}$, show that $\frac{dy}{dx} = \frac{t^2-1}{2t}$.

b) Evaluate $\int_0^{\frac{\pi}{2}} \cos^9 x dx$

Q8. a) Solve the differential equation: Given $\frac{dy}{dx} = (4x + y + 1)^2$

b) Find the area under the curve $y = 4x^2$ from $x = 0$ to $x = 3$

S. B. Roll. No.....

FUNDAMENTAL CHEMISTRY
1st Exam/TT/5012/Dec'25
(For 2023 Batch Onwards)

Duration: 3Hrs.

M.Marks:50

SECTION-A

Q1. Do as directed any nine of the following.

9x1=9

- Cotton is a natural fibre. (T/F)
- Sheep is the source of Wool. (T/F)
- Sulfuric Acid is strong acid. (T/F)
- Mercerization is done on cotton. (T/F)
- Bases convert Blue litmus to Red. (T/F)
- Scouring is done to remove natural impurities. (T/F)
- Wool is a _____ fibre.
- What are acid radicals?
- Full form of RO is _____
- What is soft water?
- Acids are sour in taste. (T/F)
- PH of drinking water is _____

SECTION-B

Q2. Attempt any five questions.

5x4=20

- How Acids are different from Bases?
- Explain Mercerization in details.
- Write down Concept of Ph.
- Explain Scouring agents in details.
- What are Carriers?
- How Binders work on Textile surface?
- What is carbonization?

SECTION-C

Q3. Attempt any three questions.

3x7=21

- How Dyes and Pigments are different?
- Write down the difference between hard water and soft water.
- How Carriers help dyeing Polyester?
- How Mercerization changes the qualities of Cotton?
- What are Bleaching agents?

S. B. Roll. No.....

BASICS OF TEXTILE TECHNOLOGY
1st Exam/TT/5014/Dec'25
(For 2023 Batch Onwards)

Duration: 3Hrs.

M.Marks:50

SECTION-A

Q1. Do as directed any nine of the following.

9x1=9

- a. The raw material used to prepare yarn is _____.
- b. _____ fibre is obtained from sheep.
- c. Silk is obtained from _____.
- d. Blowroom prepares _____ on scutcher machine.
- e. Spinning is preparing yarn from fibres.
- f. Fabrics are prepared on loom machine.
- g. Cotton is man-made fibre.
- h. Twist decreases yarn strength.
- i. What is twist?
- j. What is finishing?
- k. What is cloth?
- l. Give example of any man-made fibre.

SECTION-B

Q2. Attempt any five questions.

5x4=20

- i. What is fibre?
- ii. What do you mean by dyeing process?
- iii. Write a note on yarn twist.
- iv. What is spinning?
- v. Explain the printing process.
- vi. What do you mean by loom?
- vii. Write a note on basic motions of loom.

SECTION-C

Q3. Attempt any three questions.

3x7=21

- a. How will you classify different types of fibres?
- b. What is fabric? What are different types of fabrics?
- c. Write a note on garment manufacturing process.
- d. Explain different end uses of woven fabrics, knitted fabrics and non woven fabrics.
- e. Write a note on yarn numbering system.

S. B. Roll. No.....

STRUCTURAL FABRIC DESIGN-I
1st Exam/TD/0123/2363/Dec'25
(For 2023 Batch Onwards)

Duration: 3Hrs.

M.Marks:50

SECTION-A

Q1. Do as directed any nine of the following.

9x1=9

- a. Interlacement of warp and weft is _____
- b. Knitting is _____ of loops.
- c. Transverse direction threads are known as _____
- d. Heald wires are put in heald _____
- e. _____ is a comb like structure.
- f. Draft is made _____ the design on graph paper.
- g. Graph paper show warp and _____ threads in cloth
- h. Plain weave can be made with _____ heald frames minimum
- i. There are _____ basic weaves
- j. Plain weave is the strongest weave. (T/F)
- k. Selvedge of cloth should be very strong. (T/F)
- l. 2/2 twill is Balance Twill. (T/F)

SECTION-B

Q2. Attempt any five questions.

5x4=20

- i. What are elementary weaves? Make design.
- ii. Define knitting and its types.
- iii. Make any warp face twill design of your choice.
- iv. Make a Basket weave in 4x3x2x1 repeat
- v. Define Drafting, Denting and Peg plan.
- vi. Make 3x3 matt weave on graph.
- vii. Make a Zig Zag Twill in any repeat.

SECTION-C

Q3. Attempt any three questions.

3x7=21

- a. Make a 3/3 Harring bone twill, with draft and peg plan.
- b. What is relation between design draft and peg plan?
- c. Make different types of drafts and explain them.
- d. Compare 3/2 twill with 2/3 twill in all aspects
- e. Explain methods of ornamentation of Plain weave.

S. B. Roll. No.....

TEXTILE FIBER PROCESS
1st Exam/TD/0122/Dec'25
(For 2023 Batch Onwards)

Duration: 3Hrs.

M.Marks:50

SECTION-A

Q1. Do as directed any nine of the following.

9x1=9

- Vegetable fibers are composed of _____
- Nylon fiber is having more strength and _____.
- _____ fibers are strong and pliable.
- Viscose fibers stronger than _____
- _____ is a high luster natural fiber.
- Silk is a protein fiber. (T/F)
- Viscose is a regenerated fiber. (T/F)
- Wool and cotton blended yarn is made on worsted spinning system. (T/F)
- Staple fiber is of continuous length. (T/F)
- Moisture increases static charges on fibers. (T/F)
- Write any two bast fibers.
- Write any two protein fibers.

SECTION-B

Q2. Attempt any five questions.

5x4=20

- Which are synthetic fibers?
- What are the sources of production of wool?
- Write properties of jute fiber.
- Differentiate between silk and wool fiber
- How grading of cotton is done?
- What do you understand by regenerated fibers?
- How will you identify polyester and acrylic?

SECTION-C

Q3. Attempt any three questions.

3x7=21

- How will you identify the textile fibers by using physical and chemical means?
- Write the process of manufacturing of viscose rayon fiber in detail.
- Write in detail about the vegetable fibers.
- Make a classification of different type of textile fibers and explain natural fibers.
- Explain the effect of moisture on textile fibers.