

2026

Time : 3 hours

Full Marks : 70

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Answer from both the Sections as directed.

Section – A

Answer any **four** questions of the following :

10×4 = 40

1. What are the core qualities an evaluator looks for in a candidate during a Group Discussion ? Differentiate between "Leadership" and "Dominance" in this context.
2. Analyze the use of persuasive strategies and rhetorical devices in a GD. Provide examples of how one can remain "polite yet firm" when handling criticism or differing opinions from other participants.

MP – 4/2

(Turn over)

3. Explain the fundamental differences between a Chronological Resume and a Functional Resume. Under what specific professional circumstances would you recommend using one over the other ?
4. Identify and elaborate on the five critical steps to a successful presentation. How does thorough "Audience Analysis" impact the delivery and design of your slides ?
5. Discuss the role of non-verbal communication and visual aids in making a presentation effective. What are some common pitfalls to avoid during the delivery phase ?
6. "Preparation is 90% of the interview success." Outline the strategies a candidate should employ before, during and after an interview to ensure a positive outcome.
7. "A cover letter is not just a summary of a resume but a sales pitch." Discuss this statement by outlining the essential components of an effective job application letter.

8. Explain the concept of "Borrowing" in the enrichment of the English vocabulary. Provide at least five examples of loanwords from different languages and explain how they became integrated into English .

Section – B

Answer all questions :

3×10 = 30

9. Explain the fundamental difference between hearing and listening using one practical example.
10. Identify and explain any three types of semantic or linguistic barriers that can distort a message.
11. List any three of the "Ten Commandments of Good Communication" as proposed by the American Management Association.
12. Rewrite the following sentence in passive voice and explain why the passive construction is often preferred in scientific reporting : "The researcher observed the chemical reaction".

13. Identify the error in this sentence and provide the correction : "By the time the meeting ends the committee has reached a decision".
14. State the primary purpose of a meeting's Agenda and how it differs from the Minutes of the meeting.
15. List three essential sections that must be included in the front matter or introductory part of a formal technical report.
16. Fill in the blanks with appropriate prepositions :
"The data was transferred _____ the server
_____ the cloud storage." Briefly explain your choice.
17. Define a "Circular" and explain one specific situation where a business would issue a circular instead of a standard letter.
18. Explain the specific rule for using the definite article "the" when referring to scientific instruments or unique natural phenomena.



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Section – A

Answer any **four** questions of the following :

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1. Solve the differential equation :

$$x \frac{dy}{dx} + y \log y = xye^x$$

2. Find the area common to the circle $r = a\sqrt{2}$ and $r = 2a \cos \theta$.

3. If $u = \log(x^3 + y^3 + z^3 - 3xyz)$, Show that :

$$\left(\frac{\partial}{\partial x} + \frac{\partial}{\partial y} + \frac{\partial}{\partial z} \right)^2 u = \frac{-9}{(x+y+z)^2}$$

$3u(u-1) + 3y(y-1) + 3z(z-1)$

4. To evaluate the double integral

$$\int_0^8 \left(\int_{y/2}^{(y/2)+1} \left(\frac{2x-y}{2} \right) dx \right) dy, \text{ we make the}$$

substitution $= \left(\frac{2x-y}{2} \right)$ and $v = \frac{y}{2}$. The integral will reduce to.

5. A body originally at 60°C cools down to 40°C in 15 minutes when kept in air at a temperature of 25°C . What will be the temperature of the body at the end of 30 minutes ?

6. Change the order of integration in :

$$\int_0^\infty \int_x^\infty \frac{e^{-y}}{y} dy dx.$$

7. Evaluate the integral $\iiint (x^2 + y^2 + z^2) dx dy dz$ take over the volume enclosed by the sphere $x^2 + y^2 + z^2 = 1$.
8. State and prove Leibnitz's theorem for n th derivative of a product.

Section – B

(Short-answer Type Questions)

Answer all questions of the following :

$$3 \times 10 = 30$$

9. Find the volume of the reel-shaped solid formed by the revolution about the y-axis, of the part of the parabola $y^2 = 4ax$ cut off by the latus-rectum.
10. Find the area enclosed by Lemniscate $r^2 = 2a^2 \cos \theta$.
11. Solve : $\frac{dy}{dx} = e^{3x-2y} + x^2 e^{-2y}$.
12. Find the area enclosed by lemniscate $r^2 = 2a^2 \cos \theta$.
13. Apply the Maclaurin's series to prove the following expression $\sec x = 1 + \frac{x^2}{2!} + \frac{5x^4}{4!} + \dots \infty$.
14. Solve the differential equation :

$$x \frac{dy}{dx} - 3y = x^2.$$

$$\int \pi x^2 dy$$

✓ 15. Find the extreme value of the function

$$f(x, y) = xy - x^2 - y^2 - 2x - 2y + 4.$$

✓ 16. If $y = \sin^{-1} x$, prove that:

$$(1 - x^2)y_2 - xy_1 = 0.$$

✓ 17. Find the first and second partial derivatives of

$$z = x^3 + y^3 - 3axy.$$

18. Find the volume in the first octant bounded by the planes $x + z = 1$ and $y + 2z = 2$.



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Section – A

(Long-answer Type Questions)

Answer any **four** questions of the following :

10×4 = 40

1. Explain the concept of Management by Objectives (MBO) and discuss its advantages and limitations in enhancing organizational performance.

2. Explain how a firm can identify opportunities and threats by analyzing the business environment, gaining a competitive advantage.
3. Describe the difference between formal and informal structures. Why should managers pay attention to informal groups ?
4. "HUF business is found only in India". Describe the features of a joint Hindu family business that justify this statement.
5. Explain the concept of organizational structure. What does a formal organization chart visually represent ?
6. Discuss the various steps involved in the planning process, from setting objectives to follow-up action.
7. Discuss the merits and demerits line and staff organisation with example.
8. What is the difference between Trading and Partnership business ?

Section – B
(Short-answer Type Questions)

Answer all questions of the following :

3×10 = 30

9. Define these terms :
 - (a) Agency
 - (b) MBO
 - (c) Company
10. Define the nature and significance of the organisation.
11. Explain the general planning process adopted by the business organizations.
12. Discuss the steps involved in decision making process.
13. What is decision making ? Explain the challenges in group decision making.
14. What is Planning ? Discuss the steps involved in planning.
15. Explain, in details, various types of planning.

16. Write short notes on types of strategies.
17. What are the objectives of planning ? Explain how you will set objectives for a manufacturing organizations.
18. What is the difference between industry and commerce ?



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Section – A

Answer any **four** questions of the following :

10×4 = 40

1. Explain different types of computers on the basis of size, purpose, technology and functionality. Describe each category in detail.
2. Explain algorithm, flowchart and pseudocode with suitable examples.
3. Describe printers and plotters with their types. Compare the characteristics of different types of printers.

4. Discuss the concept of memory hierarchy with diagram. Also explain the communication between CPU, memory and I/O devices.
5. Define an operating system and explain its functions. Describe different types of operating systems.
6. Discuss different network topologies with diagrams. Discuss their advantages and disadvantages.
7. Describe search engines and web searching techniques. Also discuss Internet security and viruses.
8. Perform the following operations :
 - (a) Convert $(1011)_2$ to decimal
 - (b) Convert $(156)_{10}$ to octal
 - (c) Verify whether $(101010)_2 = (52)_8$
 - (d) Perform : $(1011)_2 + (1101)_2$ and give answer in decimal
 - (e) Convert $(7B)_{16}$ to octal



Section – B
(Compulsory)

Answer all questions :

3×10 = 30

9. What is NAND gate ?
10. Define Internet.
11. Differentiate between RAM and ROM.
12. What are types of networks (LAN, MAN, WAN) ?
13. What is ASCII code ?
14. Define computer architecture with suitable diagram.
15. Cloud storage is a form of primary device or secondary device ? Explain.
16. What is 1GL, 2GL, 3GL ?
17. What are components of data communication ?
18. What is the relationship between Hardware and Software ?



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Answer from both the Groups as directed.

Group – A

Answer any **four** questions of the following :

$$10 \times 4 = 40$$

1. Define constants, variable, and data types in C. Explain different types of declarations with an suitable examples.
2. Differentiate between Structure and Union in C.
3. What is While Loop ? How it is different from do....while loop ? Explain with an suitable example.

4. Define Function. Explain call by value and call by reference with an suitable example.
5. What is array ? Write a program to multiply two matrices.
6. Discuss various string-handling functions (strlen, strcpy, strcmp, strcat) in detail.
7. Write a detailed note on file management in C. Explain file operations (fopen, fclose, fprint, fscanf, etc.) with an example.
8. Explain how arrays and strings are passed to functions.

Group – B

Answer all questions of the following :

$$3 \times 10 = 30$$

9. Differentiate between Local variable and Global variable.
10. Define is else statement.
11. Define operator precedence.
12. What is role of header file in C Program.

13. What is function recursion ?
14. Define pointer with a suitable example.
15. Write a program to swap two numbers without using third variable.
16. What does strlen() do ?
17. Describe 1D and 2D arrays with programs.
18. Explain decision-making statements

