BUSINESS COMMUNICATION

UG-F-1001-BCA

2025

Full Marks : 70

Time : 3 hours

Answer from **both** groups as directed .

The figures in the right-hand margin indicate marks.

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

GROUP—A

Answer any *four* questions: 10 × 4

1. Draft a Resume for the position of Marketing Executive for a fresh graduate. Assume any relevant details.

2. Write a Job Application Letter in response to an advertisement for the role of Software Developer at a reputed firm.

3. Describe the various types of employment-related letters apart from resumes and cover letters. Provide examples for each (e.g., thank-you letters, resignation letters).

4. Discuss the common barriers to effective employment communication and suggest strategies to overcome them.

5. You have received a job offer, but you wish to negotiate the salary. Draft a letter for salary negotiation, maintaining professionalism and courtesy.

6. Describe any *five* strategies that can help a candidate perform well in a Group Discussion.

7. Describe the steps involved in preparing for an interview. How can a candidate use body language and verbal communication to create a good impression ?

8. Explain *word formation* and its methods in detail. Discuss processes such as compounding clipping, blending, back-formation, acronyms and conversion with examples.

GROUP—B

(Short Answer Type Questions) 3×10

(Answer *all* questions)

9. Write a coherent paragraph on the topic " *Importance of Time Management in Business*" (around 4-5 lines).

10. Identify the type of graph you would use to show a company's sales performance over the last five years and explain why.

11. Draft the subject line and salutation of a letter of complaint to supplier regarding late delivery.

12. Define agenda. Name any two items commonly listed in a meeting agenda.

13. Name three types of listening and describe any one of them.

14. Convert the following active voice sentence into passive voice:
The scientist explained the theory clearly to the students.

15. Rearrange the following jumbled sentence into proper order:

(*a*) is essential

(*b*) in any experiment

(*c*) accuracy of measurements

16. Write the synonym of the following words:

(*a*) Accurate

(*b*) Essential

(*c*) Complex

17. Write the antonym of the following words:

(*a*) Increase

(*b*) Permanent

(*c*) Success

18. Identify and correct the error in the following sentence:
Each of the students have submitted their assignments on time.

BUSINESS PRACTICES AND MANAGEMENT

2025

Full Marks : 70

Time : 3 hours

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GROUP—A

Answer any *four* questions: 10 × 4

1. Define Joint Stock Company and its features.

2. Describe the importance of management.

3. Define Organising and its functions.

4. Describe the features of Cooperative Societies.

5. Define Business Environment and factors affecting business environment.

6. Describe the process of communication network.

7. Distinguish between Formal and Informal Organisation.

8. Define Motivation and its importance.

GROUP—B
(Answer *all* questions) 3 × 10

9. Define Budget.

10. What is Authority ?

11. Define Management.

12. Define Leadership.

13. Define Directing.

14. What is Time Study ?

15. What is Planning ?

16. What is Partnership Deed ?

17. What is Delegation ?

18. Define Communication.

BASIC MATHEMATICS

UG-F-1002-BCA

2025

Full Marks : 70

Time : 3 hours

Answer from **both** the Sections as directed.

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SECTION–A

Answer any *four* questions: 10×4

1. State and prove Leibnitz theorem.

2. Apply Maclaurin's series to prove the expansion.

$$\log(1+\tan x) = x - \frac{x^2}{2!} + \frac{4x^3}{3!} \cdots \text{ to } \infty$$

3. Find Maxima and Minima of the function $x^3 + y^3 - 12x - 3y + 15$.

4. Evaluate the integral $\int_0^{\pi}\int_x^{\pi} \frac{\sin y}{y} dydx$.

5. Find Length of the loop of the curve $3ay^2 = x(x-a)^2$.

6. Find the area common to the parabola $y^2 = ax$ and the circle $x^2 + y^2 = 4ax$.

7. Solve the differential equation:

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

8. Solve the equation: $(1+y^2)\frac{dy}{dx} + x = \tan^{-1} x$

SECTION–B

Answer *all* question of the following: 3×10

9. If $y = \sin^{-1} x$, prove that $(1+x^2)y_2 - xy_1 = 0$.

10. Explain Homogeneous partial differential equation with examples.

11. Expand $\log(1+x)$ by Maclaurin's theorem.

12. Define order and degree of a differential equation with example.

13. Solve the differential equation:

$$\frac{d^2y}{dx} + a^2y = \tan x$$

14. Find all maxima and minima of the function $y = x^3 - 3x + 2$.

15. Solve: $\frac{dy}{dx} = e^{3x-2y} + x^2e^{-2y}$.

16. Find the first and second partial derivatives of $z = x^3 + y^3 - 3axy$.

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

18. Find the area enclosed by Lemniscate $r^2 = 2a^2 \cos\theta$.

COMPUTER SCIENCE

Total Pages : 5

UG-C-1004-BCA

2025

Full Marks : 70

Time : 3 hours

Answer from **both** Sections as directed .

The figures in the right-hand margin indicate marks.

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

SECTION–A

Answer any *four* questions: 10 × 4

1. Explain the classifications of computers on the basis of size and also technology. Describe each category in detail, highlighting characteristics, uses and technology.

2. Answer the following questions:

(*a*) Add 111000 and 0101011

(*b*) Convert $(476)_8$ to its binary equivalent without converting into decimal number.

(*c*) Convert the binary number 1011010011 to its hexadecimal equivalent

(*d*) Convert $(ADD)_{16}$ to its equivalent decimal number

(*e*) Subtract binary numbers 100001 from 1110000

(*f*) Write 1s and 2s compliment of the binary number 1100110010

(*g*) Multiply the binary number 11001111 and 11111

(*h*) Divide the binary number 11101 by 11

(*i*) Convert $(512)_{10}$ to its binary equivalent

3. What are Printers ? Explain different types of printers ? Compare the characteristics of laser, inkjet and dot matrix printers.

4. What is an email ? Explain the different folders of an email. Write the steps to compose and send an email with an attachment.

5. Define input and output devices and list five examples of each. Discuss how voice recognition devices are used for input in computing systems.

6. Explain secondary storage devices of computers. Differentiate between primary storage and secondary storage.

7. What is an operating system, and why is it considered system software ? Differentiate between system software and application software with examples.

8. Define network topology. Discuss ring topology and mesh topology along with its advantages and disadvantages.

SECTION–B

All questions are compulsory 3 × 10

9. Write the Boolean expression and symbol for basic logic gates.

10. Discuss briefly the technology used in different generations of computer.

11. What is a web browser ? Name any three important web browsers.

12. "The cloud storage is also a form of secondary storage." True/False. Comment.

13. What are the different types of transmission modes in data communication ?

14. What are the functions of repeaters in network communication ?

15. Define the term "pseudocode" ? What is its role in algorithm design.

16. Briefly discuss different types of ROM.

17. What is a cache memory ?

18. How does the size of RAM affect the performance of a computer ?

PROBLEM SOLVING WITH "C"

UG-C-1005-BCA

2025

Full Marks : 70

Time : 3 hours

Answer from **both** the Groups as directed.

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GROUP—A

Answer any *four* questions: 10 × 4

1. Write short notes on History of 'C'. What is an operator ? List and explain various categories of operators in C.

2. What is for loop ? How it is different from do...while loop ? Explain with the help of an example. Also explain use of break statement.

3. Define Array. Write a C program which read an array of ten integer values and search a given value in the array. If that value exist in the array display its squares otherwise display " The value is missing".

4. Define user defined function. How many types of function calls are available in C ? Explain it with example.

5. Define recursion and its uses. Write a recursive program in C to find the factorial of a given number between 1 to 10.

6. What are Structures in C ? Write a C program to create a structure to store name, roll number, address and course of ten students. Use array of structure to display details of the students.

7. Write a C program to award grade to the students depending on the marks.

   (*a*) if marks> 75 then Grade 'O'

   (*b*) 61-75 then Grade 'A'

   (*c*) 45-60 then Grade 'B'

   (*d*) 30-44 then Grade 'C'

   (*e*) <30 then Grade 'F'

8. Write a C program to open an existing file myfile.txt and read it content and display it.

GROUP–B

All questions are compulsory 3 × 10

9. Differentiate between local variables and global variables.

10. Define a macro to find the cube of a given number.

11. What is the role of header files in C program?

12. Write a short note on Ternary Operator.

13. Distinguish between structure and union.

14. List different storage classes in C.

15. Write the syntax and use of the strcat() function.

16. Define Operator precedence.

17. Write a program in C to find the sum of digits of a 5-digit number.

18. Write down the disadvantage of function.
