

**2022-23**

**BCA**

**Core Course – 1**

**(Digital Logic)**

*Time : 3 hours*

*Full Marks : 60*

*The figures in the right-hand margin indicate marks.*

*Answer from all the Groups as directed.*

**Group – A**

1. Fill in the blanks : 1×8 = 8

(a) NAND gate is the combination of NOT and \_\_\_\_\_ gate.

(b) NOR gate is the combination of OR and \_\_\_\_\_ gate.

(c)  $(1)_2 + (1)_2 = \underline{\hspace{2cm}}$

(d) IEEE stands for \_\_\_\_\_.

- (e) PLD stands for \_\_\_\_\_.
- (f) EPROM stands for \_\_\_\_\_.
- (g) NOT gate is also called as \_\_\_\_\_.
- (h) Multiplexer is also called as \_\_\_\_\_.

### Group – B

2. Answer any **eight** of the following within two or three sentences each :  $1\frac{1}{2} \times 8 = 12$

- (a) What is the difference between Latch and Flip-Flop ?
- (b) What is Binary Number System ?
- (c) State De-Morgan's theorem.
- (d) Define Digital System.
- (e) What is meant by Bit ?
- (f) How many types of number system are there ?
- (g) What is the best example of Digital System ?
- (h) What is Logic gate ?
- (i) What are the basic logic gates ?
- (j) Which gates are called as universal gate ?

**Group – C**

3. Answer any **eight** of the following within **75** words each :

$$2 \times 8 = 16$$

- (a) What is Boolean Algebra ? Why is it used ?
- (b) Why K-map is used ?
- (c) Name two forms of Boolean expression.
- (d) What are Minterm and Maxterm ?
- (e) Define Fan-in and Fan-out.
- (f) What is the use of Timing diagram ?
- (g) What is Finite State Machine ?
- (h) Compare in between SRAM and DRAM.
- (i) What is RAMBUS Memory ?
- (j) What is Optical Disk ?

**Group – D**

Answer **all** questions within **500** words each :

$$6 \times 4 = 24$$

4. Write the different Boolean identities.

**OR**

Simplify the following Boolean Function :  
 $F(a, b, c, d) = \sum (0, 1, 2, 5, 7, 8, 9, 10)$  by using  
K-map.

5. Write Booth's Multiplication Algorithm.

OR

Explain Carry Lookahead Adder.

6. Draw the Logic Circuit of Master-Slave Flip-Flop  
and explain it.

OR

Design a 4-bit Down counter and explain the  
principle of counting.

7. Explain about semi conductor RAM memories.

OR

Compare technically in between Magnetic Tape  
and Magnetic Disk.



**2022-23**

**BCA**

**Core Course – 2**

**(Programming Using C)**

*Time : 3 hours*

*Full Marks : 60*

*The figures in the right-hand margin indicate marks.*

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

**Group – A**

1. Fill in the blanks of the following : 1×8 = 8

(a) Preprocessor directive is begins with

\_\_\_\_\_ symbol.

(b) Enumeration is \_\_\_\_\_ type.

(c) \_\_\_\_\_ is equivalent to  $a++ = 1$ .

(d) \_\_\_\_\_ is an exit controlled loop.

- (e) A function called itself is known as \_\_\_\_\_.
- (f) Each string is terminated with \_\_\_\_\_ character.
- (g) Strcpy( $S_1$ ,  $S_2$ ) function copies  $S_1$  and  $S_2$ .  
(True / False)
- (h) In union, the \_\_\_\_\_ address for each data element is same.

### Group – B

2. Answer any **eight** questions of the following within **two or three** sentences each :  $1\frac{1}{2} \times 8 = 12$

- (a) Define Keyword.
- (b) Define C-identifier.
- (c) Write the syntax of if ..... else statement.
- (d) How to declare an Array ?
- (e) What is Pointer ?
- (f) What is use of Strlen () ?
- (g) What is Structure ?
- (h) What is Command Line Arguments ?

- (i) Define Union.
- (j) What is Stream ?

### Group – C

3. Answer any **eight** questions of the following within **75** words each :  $2 \times 8 = 16$

- (a) Explain the structure of a C-program.
- (b) Define syntax and logical error.
- (c) Write switch statement in C.
- (d) Write the syntax of while and do-while statement.
- (e) Explain about '++ a' and 'a --' expression.
- (f) Explain the types of function in C.
- (g) Distinguish between Call by value and Call by reference.
- (h) Define recursion with example.
- (i) Explain about Sequential and Random Access file.
- (j) Differentiate between Formal and Actual Parameters.



**Group – D**

Answer **all** questions within **500** words :

6×4 = 24

4. Discuss the different types of operators in C with example.

**OR**

Write and explain the control structures in C.

5. Write, in details, the loopings statements in C.

**OR**

Write a C-program to check a number is Armstrong or not.

6. Write short notes on the following :

- (a) Pointer
- (b) Library function

**OR**

Write a C-program to find the transpose of a matrix.



7. Explain the following term :

(a) `fopen()`

(b) `fclose()`

(c) `feof()`

(d) `fseen()`

(e) `fget()`

(f) `fput()`

**OR**

What is Union ? Mention the difference between structure and union with example.

**2022-23**

**BCA**

**Generic – 1 (P-1)**

**(Principles of Management)**

*Time : 3 hours*

*Full Marks : 80*

*The figures in the right-hand margin indicate marks.*

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

**Group – A**

1. [A] Fill in the blanks : 1×6 = 6
- (a) Management is \_\_\_\_\_ oriented.
  - (b) \_\_\_\_\_ is the first function of management.
  - (c) \_\_\_\_\_ requires mental exercise.
  - (d) \_\_\_\_\_ is known as the father of Human Relation Approach of Management thought.

(e) \_\_\_\_\_ means concentration of authority at the top management.

(f) Strategic management handles \_\_\_\_\_ issues.

[B] Answer in **one** word :

1×6 = 6

(g) Which charts show the flow of authority from top to bottom ?

(h) How many principles of management were suggested by Henry Fayol ?

(i) Which term defines the process of influencing others towards the attainment of specific goals ?

(j) Which communication is known as grapevine communication ?

(k) Which budgeting does not consider future as the projection of the past ?

(l) What is the type of decision called when an executive takes a decision in a personal capacity that does not relate to the organisation ?

### Group – B

2. Answer any **eight** of the following questions is not more than two or three sentences each :

$$2 \times 8 = 16$$

- (a) What is Participative Management ?
- (b) What is principle of equity ?
- (c) Define authority.
- (d) What is Communication Barrier ?
- (e) What do you mean by Span of Control ?
- (f) What is the full form of DSS ?
- (g) What do you mean by Decision Tree ?
- (h) What is Line Organisation ?
- (i) Define Motivation.
- (j) What do you mean by Strategy ?

### Group – C

3. Answer any **eight** questions of the following within **75** words each :

$$3 \times 8 = 24$$

- (a) State any three important features of management.

- (b) What is Motion Study ?
- (c) What is Unity of Direction ?
- (d) Name the types of plans on the basis of time.
- (e) Give a short note on stability strategy.
- (f) What do you mean by Brainstorming ?
- (g) Give a short note on Organisation Chart ?
- (h) What is classical theory of authority ?
- (i) Distinguish between Delegation and Decentralisation.
- (j) Who is an autocratic leader ?

#### **Group – D**

Answer **all** questions within **500** words each :

$$7 \times 4 = 28$$

4. Explain the classical theory of management. How does it contribute to the management thought ?

**OR**

Discuss the various characteristics of management.

5. Elucidate and discuss benefits or advantages of planning.

OR

Explain the types of Organisation.

6. Explain the meaning and importance of staffing function.

OR

Define Controlling. Explain the essential requirements of an effective control system.

7. What is strategic management and why it is important ?

OR

Discuss the role of strategists in strategic management process.



**2022-23**

**B.Sc. / BCA**

**AECC – 1**

**(Environmental Studies &  
Disaster Management)**

**(For 2021-22 & 2022-23 Admitted Batch)**

*Time : 3 hours*

*Full Marks : 80*

*The figures in the right-hand margin indicate marks.*

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

**Group – A**

1. Fill in the blanks : 1×12 = 12
- (a) The process of breaking up of rocks into smaller particles is called \_\_\_\_\_.
- (b) The sphere of soil is called \_\_\_\_\_.
- (c) The atmospheric layer lying above the troposphere is the \_\_\_\_\_.



- (d) \_\_\_\_\_ term deals with the study of inter-relationship between a community and its environment.
- (e) The process of succession when starts in an aquatic habitat is called \_\_\_\_\_
- (f) Living organisms which feed on the food prepared by producers are called \_\_\_\_\_
- (g) Energy flow in an ecosystem is \_\_\_\_\_ .
- (h) \_\_\_\_\_ layer is seen in the stratosphere of atmosphere.
- (i) The Environmental Protection Act was enacted in the year \_\_\_\_\_
- (j) The frequently occurring disaster in Odisha is \_\_\_\_\_
- (k) COVID-19 is a \_\_\_\_\_ disease.
- (l) The full form of the disease AIDS is \_\_\_\_\_

### Group – B

2. Answer any **eight** questions within **two** or **three** sentences maximum :  $2 \times 8 = 16$

- (a) What is desertification ?
- (b) Explain water cycle schematically.

- (c) What is BGC cycle ?
- (d) How energy flows in an ecosystem ?
- (e) What do you mean by Quarantine ?
- (f) Explain your idea on communicable diseases.
- (g) Define renewable resources with example.
- (h) What is Vasectomy ?
- (i) What are green house gases ?
- (j) What is Natality ?

### Group – C

3. Answer any **eight** questions of the followin within  
**75 words maximum :** **3×8 = 24**

- (a) Discuss about Noise Pollution.
- (b) Explain Global Warming.
- (c) Discuss sulphur cycle briefly.
- (d) Discuss the causes of deforestation.
- (e) Explain 'Chipko Movement'.
- (f) What are non-renewable resources of nature ?
- (g) What are the sources of water pollution ?
- (h) Explain biosphere.
- (i) What are the causes of Ozone layer depletion ?
- (j) How you can manage natural disasters ?

## Group – D

Answer **all** questions within **500** words maximum :

7×4 = 28

4. Explain the impact of industrial pollution.

OR

Differentiate between food chain and food web with suitable examples.

5. Illustrate population age pyramids.

OR

Write notes on the following :

- (a) Single use plastics
- (b) Electric vehicles

6. Explain the impact of Bhopal gas tragedy disaster on living organisms.

OR

Describe the causes and effects of flood.

7. Discuss briefly the water borne diseases and its control measures.

OR

Write notes on the following :

- (a) Diabetes
- (b) AIDS

**2022-23**

**B.Sc / BCA**

**AECC – 1**

**(Ethics and Values-1)**

*Time : 1 hour*

*Full Marks : 25*

*The figures in the right-hand margin indicate marks.*

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

**Group – A**

1. Fill in the blanks : 1×5 = 5

(a) Women constitute almost \_\_\_\_\_ of the Humanity.

(b) Gender refers to a \_\_\_\_\_ differentiation between man and women.

(c) The ideology which advocates for the rights and liberties of women is known as \_\_\_\_\_.

- (d) The 'Studies relating to the issues of women' aims at changing established beliefs and behaviour towards \_\_\_\_\_
- (e) \_\_\_\_\_ is the main reason of declining Sex Ratio in the Society.

### Group – B

2. Answer any **five** of the following within **50** words each :

$2 \times 5 = 10$

- (a) What is Ethics ?
- (b) Differentiate between Sex and Gender.
- (c) What is Gender Justice ?
- (d) Discuss Child Marriage as a social evil.
- (e) What is Gender stereo typing at work ?
- (f) What is Honor killing ?
- (g) What is 'Me Too' Movement ?

### Group – C

Answer **all** questions within **250** words maximum :

3. Discuss Gender Equality as an essential precursor to social progress.

5

OR

**What is Gender Violence ? Discuss various ways of Gender Violence.**

- 4. Examine the challenges of Working Women and their role conflict.**

**5**

**OR**

**Discuss the importance of Language in the context of treatment to women in India.**

