

**Professional Course (Odd) Examination, 2025**

( 1st Semester )

**BACHELOR OF COMPUTER APPLICATIONS**

( Introduction to Information Technology )

Full Marks : 75

Time : 3 hours

*The figures in the margin indicate full marks for the questions***( PART : A—OBJECTIVE )**

( Marks : 25 )

**SECTION—I**

( Marks : 15 )

**I. Tick (✓) the correct answer in the brackets provided : 1×10=10**

1. A step-by-step procedure to solve a given problem is called
  - (a) flowchart ( )
  - (b) algorithm ( )
  - (c) pseudocode ( )
  - (d) None of the above ( )
2. In Random Access Memory, words to be written are first entered in a small temporary storage unit called
  - (a) Memory Address Register (MAR) ( )
  - (b) Memory Data Register (MDR) ( )
  - (c) Register ( )
  - (d) None of the above ( )
3. Printers may be broadly classified as
  - (a) character printers and line printers ( )
  - (b) laser printers and dot matrix printers ( )
  - (c) impact printers and non-impact printers ( )
  - (d) None of the above ( )
4. The process of executing two or more different and independent programs by a computer at a time is called
  - (a) multitasking ( )
  - (b) multiprocessing ( )
  - (c) multiprogramming ( )
  - (d) multithreading ( )

5. A set of one or more program(s) which controls the operation of a computer system and extends the processing capability of a computer system is called
- (a) computer program ( )
  - (b) computer software ( )
  - (c) system software ( )
  - (d) application software ( )
6. In designing a complex database, a method called \_\_\_\_\_ is used to avoid inconsistency and unnecessary duplication of data in databases.
- (a) standardization of relations ( )
  - (b) normalization of relations ( )
  - (c) referential integrity ( )
  - (d) None of the above ( )
7. The three modes of data transmission are
- (a) sender, receiver and protocol ( )
  - (b) simplex, half-duplex and full-duplex ( )
  - (c) narrowband, voiceband and broadband ( )
  - (d) None of the above ( )
8. What is the formula to calculate the requirement of cable in mesh topology?
- (a)  $n + 1$  ( )
  - (b)  $n - 1$  ( )
  - (c)  $\frac{n(n - 1)}{2}$  ( )
  - (d)  $\frac{n(n + 1)}{2}$  ( )
9. A computer on Internet is identified by
- (a) e-mail address ( )
  - (b) port address ( )
  - (c) IP address ( )
  - (d) specific address ( )

10. Which is a small malicious program that runs hidden on infected system, works in background and steals sensitive data?
- (a) Virus ( )
- (b) Trojan ( )
- (c) Shareware ( )
- (d) Adware ( )

II. State whether the following statements are *True (T)* or *False (F)* by putting a Tick (✓) mark in the brackets provided : 1×5=5

1. Cache memory is very fast but small memory used as a buffer between the CPU and the main memory. ( T / F )
2. Online system is a system that has to work within strict time limits for critical jobs. It requires highly reliable system. A delay in response may lead to fatal failures. ( T / F )
3. The first step in designing a database is to define the data types (e.g., numeric, alphabetic, etc.) ( T / F )
4. Address Resolution Protocol (ARP) is used to find the logical address. ( T / F )
5. Boot sector virus infects the master boot record and it is challenging and a complex task to remove this virus. ( T / F )

#### SECTION—II

( Marks : 10 )

III. Answer the following questions : 2×5=10

1. What are the different types of data?
2. How does a CPU bound job differ from I/O bound job?
3. What is database management system?
4. Write two advantages of fiber-optic cable.
5. What is search engine? Give examples.

#### ( PART : B—DESCRIPTIVE )

( Marks : 50 )

IV. Answer the following questions : 10×5=50

1. Explain the physical devices used to build storage systems of computer with suitable diagram. 10

**OR**

2. What is central processing unit? Explain the differences between general-purpose processors and embedded processors. 3+7=10
3. (a) What is an operating system? Explain the functions of operating system. 1+4=5
- (b) What is flowchart? Explain the basic symbols used in flowchart designs. 1+4=5

**OR**

4. (a) Explain the workings of multiprogramming and multiprocessing systems. 5
- (b) Differentiate between compiler and interpreter. 5
5. (a) Explain the different categories of users in database system. 5
- (b) Explain the differences between file-oriented approach and database approach. 5

**OR**

6. Write notes on the following : 5+5=10
- (a) Non-text database
- (b) Archiving database
7. What is topology? Explain the different types of topology with suitable diagram. 2+8=10

**OR**

8. What is OSI reference model? Explain the different functions of each layer in OSI reference model. 2+8=10
9. (a) Explain the societal impact of Information Technology in the modern society. 5
- (b) Write a short note on e-mail system. 5

**OR**

10. (a) Explain privacy, security and integrity of information. 5
- (b) What is intellectual property right? What are the three types of intellectual property? 2+3=5

\*\*\*