

Serial No.

TEST BOOKLET

Technical Assistant 'A' (Computer Science)

Maximum Marks: 100

INSTRUCTIONS

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS TEST BOOKLET **DOES NOT** HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS, ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET. THE QUESTION BOOKLET HAS **EIGHT PAGES**.
2. Please note that it is the candidate's responsibility to fill in the roll number carefully and without any omission or discrepancy at the appropriate places in the Answer Sheet. Any omission/discrepancy will render the Answer Sheet liable for rejection.
3. You have to enter your Roll Number on the Test Booklet in the Box provided alongside. **Do Not** write anything else on the Test Booklet.
4. This Test Booklet contains two parts. **Part 'A' contains** Multiple Choice Questions and Part 'B' contains the Descriptive Type Questions. Each questions in Part 'A' comprises four responses (answers). You will select the response which you want to mark on the Answer Sheet. In case you feel that there is more than one correct response, mark the response which you consider the best. In any case, choose **ONLY ONE** response for each item.
5. You have to mark your responses **ONLY** on the separate Answer Sheet(s) provided.
6. Each question in Part 'A' and Part 'B' is having **2 marks and 10 marks** respectively.
7. Before you proceed to mark in the Answer Sheet the response to various questions in the Test Booklet, you have to fill in some particulars in the Answer Sheet as per instructions.
8. After you have completed filling in all your responses on the Answer Sheet(s) and the examination has concluded, you should hand over to the Invigilator the Answer Sheet(s) and the Test Booklet.
9. Sheets for rough work are appended in the Test Booklet at the end.
10. **Penalty for Wrong answers:**

THERE WILL BE **NO PENALTY** FOR WRONG ANSWERS MARKED BY A CANDIDATE.

- a. If a candidate gives more than one answer in Part 'A', it will be treated as **wrong answer** even if one of the given answers happen to be correct and there will be **no marks** has given to that attempted question. If a question is left blank, i.e., no answer is given by the candidate, there will be **no penalty** for that question.

Part-A**(2 marks for each questions)**

1. What is the output of the following C Program?

```
#include <stdio.h>

#define MUL(x) (x*x)

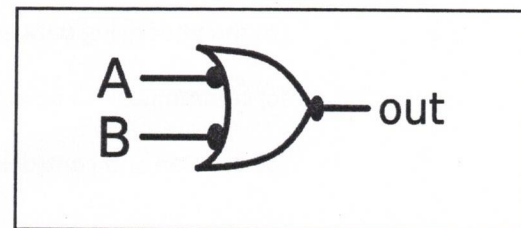
int main()
{
    int a;
    int b=6;

    a = MUL(b+3);
    printf("%d \n",a);
    return 0;
}
```

- (a) 81 (b) 27 (c) 45 (d) garbage value
2. In C programming language, which of the following types of operators have the highest precedence?
- (a) Arithmetic operator (b) Equality operator (c) Logical operator (d) Relational operator
3. An algorithm is
- (a) A method of representing the step-by-step procedure for solving a problem
(b) A diagrammatic representation to solve a problem
(c) A graphical representation of a mathematical model
(d) None of the above
4. Which of the following statements best explains a process?
- (a) It is a program
(b) It is a program in execution
(c) It is an instance of a program in execution
(d) It is a program that uses system calls
5. MTU Stands for
- (a) Minimum Transfer unit
(b) Minimum Transmission unit
(c) Maximum Transmission unit
(d) Maximum Transfer unit

6. RAID configuration of disks are used to provide
(a) Fault Tolerance (b) High Speed (c) High data density (d) None of these
7. The probability that it will rain today is 0.5. The probability that it will rain tomorrow is 0.6. The probability that it will rain either today or tomorrow is 0.7. What is the probability that it will rain today and tomorrow?
(a) 0.3 (b) 0.25 (c) 0.35 (d) 0.4
8. Virtual memory is
(a) An extremely large main memory
(b) An extremely large secondary memory
(c) An illusion of an extremely large memory
(d) A type of memory used in super computers
9. Page fault occurs when
(a) The page is corrupted by application software
(b) The page is in main memory
(c) The page is not in main memory
(d) One tries to divide a number by 0
10. Which of the following are real-time systems?
(a) An on-line railway reservation system
(b) Aircraft control system
(c) Payroll processing system
(d) None of the above
11. Critical region is
(a) a part of the operating system which is not allowed to be accessed by any process
(b) a set of instructions that access common shared resource which exclude one another in time
(c) the portion of the main memory which can be accessed only by one process at a time
(d) none of the above
12. Kernel is
(a) Considered as the critical part of the operating system
(b) The software which monitors the operating system
(c) The set of primitive functions upon which the rest of operating system function re built up.
(d) None of the above.
13. The bit that is used to show the page that is modified after being loaded into cache memory
(a) First Bit
(b) Sum Bit
(c) Dirty Bit
(d) CRC Bit

14. The size of the virtual memory depends on the size of the
 (a) address bus (b) main memory (c) Data bus (d) RAM
15. 'Aging' is
 (a) Keeping track of cache contents.
 (b) Keeping track of what pages are currently residing in the memory.
 (c) Keeping track of how many times a given page is referenced.
 (d) Increasing the priority of jobs to ensure termination in a finite time.
16. Which command is used to select distinct author (auth) from the table (book)?
 (a) Select all from book
 (b) Select distinct from book
 (c) Select auth from book
 (d) All of the above
17. The language which a computer can understand is
 (a) Assembly language
 (b) Machine language
 (c) High level language
 (d) All of these
18. The combinational circuit in Figure can be replaced by a single
 (a) XOR gate
 (b) OR gate
 (c) NOR gate
 (d) AND gate
19. Which of the following are registers?
 (a) Accumulator
 (b) Program counter
 (c) Stack pointer
 (d) All the above
20. Tera is 2 to the power of
 (a) 40 (b) 30 (c) 32 (d) 60
21. Von Neumann architecture is
 (a) MISD (b) SIMD (c) MIMD (d) SISD
22. A DNS translated a domain name into what?
 (a) Binary (b) IP (c) URL (d) Hex



23. IPv6 is represented by

- (a) 64 bits (b) 128 bits (c) 256 blts (d) 32 bits

24. The default port of SMTP port is

- (a) 25 (b) 443 (c) 476 (d) 110

25. Normalization of database is used to

- (a) eliminate redundancy
- (b) improve security
- (c) improve efficiency
- (d) minimize errors

26. The way a card game player arranges his cards as he picks them up one by one, is an example of

- (a) Insertion Sort (b) Selection Sort (c) Bubble sort (d) merge sort

27. The data flow model of an application mainly shows

- (a) Processing requirements and flow of data
- (b) the underlying data and the relationships among them
- (c) communication network structure
- (d) decision and control information

28. Which of the following would indicate that the motherboard battery has failed?

- (a) Operating system passwords are lost
- (b) Files on the hard disk are lost and corrupted
- (c) Hardware settings, including the current date and time reverts to default values
- (d) Hardware settings, including virtual memory reverts to default values

29. The data from a spreadsheet needs to be imported into a database package. Which file format would be the most appropriate when saving the spreadsheet file?

- (a) HTML (b) CSV (d) PDF (e) RTF

30. DLP stands for

- (a) Digital Language processing (b) Digital Light processing (c) Digital Light processor (d) all of them

31. Email was first Introduced by

- (a) David F. Bacon
(b) Charles Babbage
(c) Mark Zuckerberg
(d) Ray Tomlinson

32. In throwing a fair dice, what is the probability of getting the number '3'?

- (a) $\frac{1}{3}$ (b) $\frac{1}{6}$ (c) $\frac{1}{9}$ (d) $\frac{1}{12}$

33. A is twice as efficient as B. if they complete a work in 30 days find the times required by each to complete the work individually.

- (a) 70 and 35 days (b) 90 and 45 days (c) 80 and 40 days (d) 120 and 60 days

34. Who first introduced Copper currency in India?

- (a) Firoz shah Tughlaq
(b) Ala-ud-din Khilji
(c) Mohammad bin Tughlak
(d) Iltutmish

35. The number of characters limit per *tweet* in *Twitter* is

- (a) 160 (b) 140 (c) 280 (d) 320

Part-B

(Each Question is having 10 marks)

Question 1(a): What is Data communication? Describe various topology in networking? Discuss the factors that govern the selection of a topology for a network?

Or

Question 1(b): How can you prevent / counter threats to network security in an organization?

Question 2: A 36' X 12' large projection system is going to come up in an organization. Illustrate with diagrams about the electronic hardware/components to setup the system? Write a detailed Technical Specification of a Computer system that is going to be used in this projection system?

Question 3(a): Write a short description about Virtual Reality, Augmented Reality and IoT?

Or

Question 3(b): What are the initiatives taken by the government for the "Digital India"?