

Total No. of Printed Pages—12

X/25/CSc

2 0 2 5

COMPUTER SCIENCE

Full Marks : 80

Pass Marks : 24

Time : 3 hours

The figures in the margin indicate full marks for the questions

General Instructions :

- (i) Please check that the Question Paper contains **55** questions.
- (ii) 15 minutes time is given for the candidates to read the Question Paper. The Question Paper will be distributed 15 minutes before the scheduled time of the examination. In these 15 minutes, the candidates should only read the instructions and questions carefully and should not write answers on the Answer Sheet.
- (iii) For candidates without Internal Assessment, their marks will be multiplied by 1.25 to adjust their total to a maximum of 100 marks.
- (iv) The Question Paper contains 4 Sections, **Section—A, B, C and D.**
- (v) **Section—A** contains Multiple Choice Questions (MCQ). Choose the most appropriate answer from the given options. The answers to this Section must be given in the boxes provided in the Answer Sheet.
- (vi) **Section—B** contains very short answer-type questions. Answer the questions briefly, in minimum 3-4 lines.
- (vii) **Section—C** contains short answer-type questions. Answer the questions briefly giving suitable examples (if needed), in minimum 5-6 lines.

(2)

- (viii) **Section—D** contains long answer-type questions. Answer the questions by explaining the related terms or by writing proper programming codes.
- (ix) If the questions meant for the visually handicapped (Blind) students are answered by other students, they will not be evaluated.

SECTION—A

(*Maximum Marks* : 30)

(Multiple Choice Questions)

Attempt *all* questions : 1×30=30

1. It allocates memory to various applications at their request and frees the memory when it is not in use.
 - (A) Process Management
 - (B) Resource Management
 - (C) Memory Management
 - (D) Utility Management

2. These are dedicated systems and their tasks are processed immediately.
 - (A) Multitasking Operating Systems
 - (B) Batch Processing Operating Systems
 - (C) Time Sharing Operating Systems
 - (D) Real Time Operating Systems

3. Fingerprint recognition and face recognition devices have made this system very sophisticated and useful.
 - (A) Reservation System Software
 - (B) Attendance System Software
 - (C) HR Management Software
 - (D) Billing and Accounting Software

(3)

4. This command is used to configure the masterboot code.
- (A) BOOTSECT
 - (B) ASSOC
 - (C) CHGUSR
 - (D) CHKDSK
5. We can open the terminal by pressing the following keys in Ubuntu.
- (A) Shift + Ctrl + U
 - (B) Ctrl + Alt + U
 - (C) Ctrl + Shift + T
 - (D) Ctrl + Alt + T
6. It is the process of waiting for the execution of tasks in batch processing operating system.
- (A) Printing
 - (B) Spooling
 - (C) Scanning
 - (D) Remote terminals
7. It was unveiled by Microsoft CEO Steve Ballmer in 2009.
- (A) Lynx
 - (B) Bing
 - (C) Yahoo
 - (D) Mosaic

(4)

- 8.** In the Internet, computers are not connected directly to each other rather they are connected to smaller networks through
- (A) routers
 - (B) modem
 - (C) gateways
 - (D) ethernet
- 9.** It creates a unique account for each user and assigns the user ID and password for accessing the Internet.
- (A) ISP
 - (B) TCP
 - (C) HTTP
 - (D) SMTP
- 10.** It is the latest technology that provides high-speed wireless Internet and data network access over a wide area and it uses
- (A) telephone
 - (B) microwave
 - (C) cable network
 - (D) radio frequency
- 11.** TCP is able to deliver the complete message in the
- (A) duplicate form
 - (B) scanned form
 - (C) original form
 - (D) encrypted form

(5)

- 12.** The process of storing Websites on a Web server is called
- (A) casting
 - (B) hosting
 - (C) nesting
 - (D) browsing
- 13.** It is used to mark the end of the statement. It must be included at the end of every statement in all C++ programs.
- (A) Colon
 - (B) Semicolon
 - (C) Comma
 - (D) Exclamation mark
- 14.** This data type in C++ represents null value.
- (A) None
 - (B) Nil
 - (C) Null
 - (D) Void
- 15.** All the precedence levels for operators can be manipulated using
- (A) parentheses
 - (B) square brackets
 - (C) curly braces
 - (D) underscores

(6)

- 16.** The value in the case level of switch statement can be
- (A) statement
 - (B) expressions
 - (C) variable
 - (D) either a numeric or a character constant
- 17.** In 'while' and 'do-while' loop, it is necessary to include the increment or decrement step along with the other processing statements. If they are not included, the loop will become
- (A) indefinite
 - (B) definite
 - (C) regular
 - (D) irregular
- 18.** C++ program without closing curly braces } will show an error message.
- (A) Declaration terminated incorrectly
 - (B) Statement missing }
 - (C) Compound statement missing }
 - (D) Undefined symbol {
- 19.** The JVM contains a hotspot-compiler which translates performance critical bytecode instruction into _____ instruction.
- (A) nature code
 - (B) source code
 - (C) native code
 - (D) object code

(7)

- 20.** It provides methods for querying and updating data in a database.
- (A) JDBC
 - (B) ODBC
 - (C) J2EE
 - (D) JSP
- 21.** In Java, source code is called
- (A) Sun microsystem
 - (B) interpreter unit
 - (C) JCreator
 - (D) compilation unit
- 22.** They are reference-type data types that include objects and arrays which are defined in a program.
- (A) Primitive
 - (B) Non-primitive
 - (C) Boolean
 - (D) Double
- 23.** This operating system is not capable of supporting Java.
- (A) Linux
 - (B) DOS
 - (C) Windows
 - (D) macOS
- 24.** Which of the following is not a Java IDE?
- (A) Eclipse
 - (B) NetBeans
 - (C) BlueJ
 - (D) Creator

- 25.** This type of virus changes its code when it is passed from one computer to another.
- (A) Multipartite virus
 - (B) Polymorphic virus
 - (C) File infector virus
 - (D) Macro infector virus
- 26.** The computer virus gets its name from the biological virus meaning slimy liquid or poison in
- (A) Greek
 - (B) English
 - (C) Latin
 - (D) Spanish
- 27.** It was the first virus developed by Vyvojjar in 1994 to implement the technique of patchy infection.
- (A) Creeper
 - (B) Melissa
 - (C) Zmist
 - (D) OneHalf
- 28.** This type of data backup is used to store a copy of a file at a remote online location.
- (A) Incremental backup
 - (B) Absolute backup
 - (C) Online backup
 - (D) Drive imaging

(9)

- 29.** This security system in e-commerce maintains that your information must be protected from unauthorized use.
- (A) Privacy
 - (B) Integrity
 - (C) Authentication
 - (D) Non-repudiation
- 30.** This firewall is set as an intermediary between recipient and an external system.
- (A) Packet filtering
 - (B) Proxy
 - (C) Inspection
 - (D) Protocols

SECTION—B

(*Maximum Marks : 12*)

(Very Short Answer-type Questions)

From Question Nos. **31–39**, answer any *six* : 2×6=12

- 31.** Convert 4GB into equivalent KB.
- 32.** Convert $(124)_{10}$ to binary number.
- 33.** Explain the purposes of DIRECTION and BEHAVIOR attributes of <MARQUEE> tag.
- 34.** Explain the two types of URL.

(10)

35. What is the difference between = and == operators?
36. Write any two escape sequences and their purposes.
37. Define the terms 'unary operator' and 'binary operator'.
38. Can a variable be declared and initialized together? Explain using an example.
39. What are cipher and ciphertext?

SECTION—C

(Maximum Marks : 18)

(Short Answer-type Questions)

From Question Nos. **40–48**, answer any *six* : 3×6=18

40. Write the truth table of EXOR gate. Draw its logic symbol.

**[For the Visually Handicapped (Blind) Students
only in lieu of the above question]**

40. What is logic gate? Name the primary and secondary gates.
41. Perform binary addition of the following :
 $(11011)_2 + (11101)_2 + (101011)_2$
42. Explain the elements of <TABLE> tag.
43. Explain <FRAMESET> tag and its attributes 'cols' and 'rows'.

(11)

44. What is the purpose of ternary operator? Explain by using an example.
45. What are the three types of errors that you may find while compiling or executing a C++ program? Explain briefly.
46. Explain the three basic programming constructs supported by Java.
47. Write a Java program to print the squares of the first five multiples of 5.
48. Define the following terms :
- (a) Information Technology
 - (b) Cyber Crime
 - (c) Hacker

SECTION—D

(*Maximum Marks : 20*)

(Long Answer-type Questions)

From Question Nos. **49–55**, answer any *four* : 5×4=20

49. Explain the purposes of the following commands in DOS and Linux operating systems :
- (a) CD\
 - (b) ATTRIB
 - (c) DOSKEY
 - (d) ls-a
 - (e) man cd

(12)

50. Write the truth tables of NAND and NOR gates. Draw their logic symbols.

**[For the Visually Handicapped (Blind) Students
only in lieu of the above question]**

50. What is number system? Explain the four standard number systems.
51. Write the HTML code to display the following nested list in a Web browser :

Computer Language

1. Programming Language

- JAVA
- C
- C++

2. Markup Language

- HTML
- DHTML
- XML

52. Write a C++ program to check and print whether a number entered by a user is divisible by 5 or not.
53. Write a C++ program to print the sum of any n numbers entered by the user.
54. Write a Java program to accept an alphabet and check whether it is a vowel or a consonant.
55. Write any ten routine ways to protect your computer system and data from cyber crimes.

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