

CET-2015

Sr. No. : 141241

Booklet Series Code : A

Important : Please consult your Admit Card / Roll No. Slip before filling your Roll Number on the Test Booklet and Answer Sheet.

Roll No. *In Figures*

--	--	--	--	--	--

In Words

O.M.R. Answer Sheet Serial No.

--	--	--	--	--	--

Signature of the Candidate : _____

Subject : COMPUTER SCIENCE

Time : 70 minutes

Number of Questions : 60

Maximum Marks : 120

DO NOT OPEN THE SEAL ON THE BOOKLET UNTIL ASKED TO DO SO

INSTRUCTIONS

1. Write your Roll No. on the Question Booklet and also on the OMR Answer Sheet in the space provided and nowhere else.
2. Enter the Subject and Series Code of Question Booklet on the OMR Answer Sheet. Darken the corresponding bubbles with **Black Ball Point / Black Gel pen**.
3. Do not make any identification mark on the Answer Sheet or Question Booklet.
4. To open the Question Booklet remove the staple(s) gently when asked to do so.
5. Please check that this Question Booklet contains **60** questions. In case of any discrepancy, inform the Assistant Superintendent within 10 minutes of the start of test.
6. Each question has four alternative answers (A, B, C, D) of which only one is correct. For each question, darken only one bubble (A or B or C or D), whichever you think is the correct answer, on the Answer Sheet with **Black Ball Point / Black Gel pen**.
7. If you do not want to answer a question, leave all the bubbles corresponding to that question blank in the Answer Sheet. No marks will be deducted in such cases.
8. Darken the bubbles in the OMR Answer Sheet according to the Serial No. of the questions given in the Question Booklet.
9. Negative marking will be adopted for evaluation i.e., 1/4th of the marks of the question will be deducted for each wrong answer. A wrong answer means incorrect answer or wrong filling of bubble.
10. For calculations, use of simple log tables is permitted. Borrowing of log tables and any other material is not allowed.
11. For rough work only the sheets marked "**Rough Work**" at the end of the Question Booklet be used.
12. The Answer Sheet is designed for **computer evaluation**. Therefore, if you do not follow the instructions given on the Answer Sheet, it may make evaluation by the computer difficult. **Any resultant loss to the candidate on the above account, i.e., not following the instructions completely, shall be of the candidate only.**
13. After the test, hand over the Question Booklet and the Answer Sheet to the Assistant Superintendent on duty.
14. In no case the Answer Sheet, the Question Booklet, or its part or any material copied/noted from this Booklet is to be taken out of the examination hall. Any candidate found doing so, would be expelled from the examination.
15. A candidate who creates disturbance of any kind or changes his/her seat or is found in possession of any paper possibly of any assistance or found giving or receiving assistance or found using any other unfair means during the examination will be expelled from the examination by the Centre Superintendent/Observer whose decision shall be final.
16. **Telecommunication equipment such as pager, cellular phone, wireless, scanner, etc., is not permitted inside the examination hall. Use of calculators is not allowed.**

1. Which of the following is application software?
(A) Compiler (B) PowerPoint
(C) Debugger (D) Linker

2. BOSS is developed over :
(A) Mandrake (B) SUSE
(C) Fedora (D) Debian

3. Which of the following commands gives the list of the users in the systems ?
(A) whoami (B) ps
(C) ds (D) who

4. 8421codes is also called as :
(A) Gray code (B) ASCII code
(C) excess 3-code (D) BCD code

5. After counting 0, 1, 10, 11, the next binary number is :
(A) 12 (B) 100
(C) 101 (D) 110

6. Give the hexadecimal equivalent of $(11010011)_2 = ? ()_{16}$.
(A) $(D3)_{16}$ (B) $(A3)_{16}$
(C) $(B3)_{16}$ (D) $(D2)_{16}$

7. Which amongst them are used for converting one type of number system in to other form ?
- (A) Encoder (B) Logic gate
(C) Half adder (D) Full Adder
8. Which of the following topologies is not of broadcast type ?
- (A) Star (B) Bus
(C) Ring (D) Mesh
9. The term 'baud' is a measure of the :
- (A) Speed at which data travels over the communication line
(B) Memory capacity
(C) Instruction execution time
(D) Internet Speed
10. Which amongst them is a 8 bit Microprocessor ?
- (A) Intel 4040 (B) Pentium-I
(C) 8088 (D) Motorola MC-6801
11. The address bus flows in _____.
- (A) Bidirection (B) Unidirection
(C) Mulidirection (D) Circular
12. MSI stands for :
- (A) Medium Scale Integrated Circuits (B) Medium System Integrated Circuits
(C) Medium Scale Intelligent Circuit (D) Medium System Intelligent Circuit

13. A function that changes the state of the cout object is called _____ .
- (A) Member (B) Adjuster
(C) Manipulator (D) Operator
14. An array element is accessed using :
- (A) First-in-first-out approach (B) The dot operator
(C) A member name (D) An index number
15. Which of the following formulas can be used to generate random integers between 1 and 10 ?
- (A) $1 + \text{rand}() \% (10 - 1 + 1)$ (B) $1 + (10 - 1 + 1) \% \text{rand}()$
(C) $10 + \text{rand}() \% (10 - 1 + 1)$ (D) $10 + \text{rand}() \% (10 + 1)$
16. Format flags may be combined using the _____ .
- (A) bitwise OR operator (|) (B) logical OR operator (||)
(C) bitwise AND operator (&) (D) logical AND operator (&&)
17. Given a binary search tree, which traversal type would print the values in the nodes in sorted order ?
- (A) Preorder (B) Postorder
(C) Inorder (D) No Order
18. What is the running time of the following code fragment ?
- ```
for(int i=0; i<i « “ “ «j «endl;
```
- (A)  $O(\log N)$  (B)  $O(N \log N)$   
(C)  $O(N)$  (D)  $O(N^2)$

19. Suppose we're debugging a quicksort implementation that is supposed to sort an array in ascending order. After the first partition step has been completed, the contents of the array are in the following order: 3 9 1 14 17 24 22 20. Which of the following statements is correct about the partition step ?

- (A) The pivot could have been either 14 or 17
- (B) The pivot could have been 14, but could not have been 17
- (C) The pivot could have been 17, but could not have been 14
- (D) Neither 14 nor 17 could have been the pivot

20. Which of the following statements about binary trees is NOT true ?

- (A) Every binary tree has at least one node
- (B) Every non-empty tree has exactly one root node
- (C) Every node has at most two children
- (D) Every non-root node has exactly one parent

21. Which of the following is not a scripting language ?

- (A) HTML
- (B) XML
- (C) Postscript
- (D) Javascript

22. Which of the following is a platform free language ?

- (A) Fortran
- (B) Assembly
- (C) C
- (D) Java

23. Mechanism to protect private networks from outside attack is :

- (A) Firewall
- (B) Antivirus
- (C) Digital signature
- (D) Formatting

**24. A computer system that permits multiple users to run programs at same time :**

- (A) Real time system
- (B) Multi programming system
- (C) Time sharing system
- (D) Multi tasking system

**25. Telnet is a service that runs :**

- (A) Television on net
- (B) Remote program
- (C) Cable-TV network
- (D) Telenext

**26. A device that forwards data packet from one network to another is called a :**

- (A) Bridge
- (B) Switch
- (C) Hub
- (D) Gateway

**27. Which of the following is the fastest media of data transfer ?**

- (A) Co-axial Cable
- (B) Untwisted Wire
- (C) Telephone Lines
- (D) Fibre Optic

**28. Tool that is used to transfer data/files among computers on the Internet :**

- (A) FTP
- (B) Archie
- (C) TCP
- (D) Gopher

**29. Secret-key encryption is also known as :**

- (A) Asymmetric encryption
- (B) Symmetric encryption
- (C) Secret-encryption
- (D) Private encryption

**30. SMTP is a :**

- (A) Networking Protocol
- (B) Protocol used for transferring message between end user & Mail Server
- (C) Protocol used for smart card message interchange
- (D) Encryption Standard

**31. Kerberos is an encryption-based system that uses :**

- (A) Secret key encryption
- (B) Public key encryption
- (C) Private key encryption
- (D) Data key encryption

**32. DNS is :**

- (A) The distributed hierarchical naming system
- (B) The vertical naming system
- (C) The horizontal naming system
- (D) The client server system

**33. LDAP stands for :**

- (A) Light weight Data Access Protocol
- (B) Light weight Directory Access Protocol
- (C) Large Data Access Protocol
- (D) Large Directory Access Protocol

**34. Hubs are present in the network :**

- (A) To diagnose line failures, measure and manage traffic flow and simplify reconfiguring of LANs.
- (B) To interconnect the LAN with WANs.
- (C) To interconnect the WANs with WANs.
- (D) To interconnect the WANs with LANs.

**35. In the architecture of a database system external level is the :**

- (A) Physical level
- (B) Logical level
- (C) Conceptual level
- (D) View level

36. An entity set that does not have sufficient attributes to form a primary key is a :
- (A) Strong entity set (B) Weak entity set  
(C) Simple entity set (D) Primary entity set
37. The way a particular application views the data from the database that the application uses is a :
- (A) Module (B) Relational model  
(C) Schema (D) Sub schema
38. \_\_\_\_\_ produces the relation that has attributes of R1 and R2.
- (A) Cartesian product (B) Difference  
(C) Intersection (D) Product
39. The return value of the following code is
- ```
Class 1 & test(Class1 obj)
{
    Class 1 *ptr = new Class 1();
    .....
    return ptr;
}
```
- (A) Object of Class 1 (B) Reference to ptr
(C) Reference of Class 1 (D) Object pointed by ptr
40. The output of following code will be :
- ```
{int a = 5; int b = 10;
cout<<(a>b?a:b); }
```
- (A) 5 (B) 10  
(C) Syntax error (D) 15



41. The output of this program is :

```
int a= 10;
void main()
{int a = 20; cout<< a << ::a; }
```

- (A) Syntax error (B) 10 20  
(C) 20 10 (D) 20 20

42. Observe following program and answer :

```
class Example {
public: inta,b,c;
Example(){a=b=c=1;} //Constructor 1
Example(int a){a = a; b = c = 1;} //Constructor 2
Example(inta, int b) {a = a; b = b; c = 1;} //Constructor 3
Example(inta, intb,int c){ a = a; b = b; c = c;} //Constructor 4 }
```

In the above example of constructor overloading, the following statement will call which constructor  
Example obj = new Example (1,2,3);

- (A) Constructor 2 (B) Constructor 4  
(C) Constructor 1 (D) Type mismatch error

43. If the class name is X, what is the type of its "this" pointer (in a nonstatic, non-const member function)?

- (A) const X\* const (B) X\* const  
(C) X\* (D) X&

44. Which classes allow primitive types to be accessed as objects?

- (A) Storage (B) Virtual  
(C) Friend (D) Wrapper

45. When is `std::bad_alloc` exception thrown ?

- (A) When new operator cannot allocate memory
- (B) When `alloc` function fails
- (C) When type requested for new operation is considered bad, this exception is thrown
- (D) When delete operator cannot delete the allocated/corrupted object

46. An instance of relational schema  $R(A, B, C)$  has distinct values of  $A$  including NULL values.

Which one of the following is true?

- (A)  $A$  is a candidate key
- (B)  $A$  is not a candidate key
- (C)  $A$  is a primary Key
- (D) Both (A) and (C)

47. Consider the join of a relation  $R$  with relation  $S$ . If  $R$  has  $m$  tuples and  $S$  has  $n$  tuples, then the maximum size of join is :

- (A)  $mn$
- (B)  $m+n$
- (C)  $(m+n)/2$
- (D)  $2(m+n)$

48. The gates required to build a half adder are :

- (A) EX-OR gate and NOR gate
- (B) EX-OR gate and OR gate
- (C) EX-OR gate and AND gate
- (D) Four NAND gates.

49. The NAND gate output will be low if the two inputs are :

- (A) 00
- (B) 01
- (C) 10
- (D) 11

50. The Gray code for decimal number 6 is equivalent to :

- (A) 1100
- (B) 1001
- (C) 0101
- (D) 0110

**51. Which of these techniques is vital for creating Cloud computing Centres ?**

- (A) Virtualization
- (B) Transubstantiation
- (C) Cannibalization
- (D) Insubordination

**52. Which amongst them is not a major Cloud Computing Platform ?**

- (A) Google101
- (B) IBM Deep Blue
- (C) Microsoft Azure
- (D) Amazon EC2

**53. What is the tag for an inline frame ?**

- (A) Iframe
- (B) Inframe
- (C) Frame
- (D) Inlineframe

**54. The least significant bit of the binary number, which is equivalent to any odd decimal number, is:**

- (A) 0
- (B) 1
- (C) 1 or 0
- (D) 3

**55. Which of the following memory medium is not used as main memory system ?**

- (A) Magnetic core
- (B) Semiconductor
- (C) Magnetic tape
- (D) Both (A) and (B)

**56. Which of the following data structure is linear type ?**

- (A) Graph
- (B) Trees
- (C) Binary tree
- (D) Stack

57. A binary search tree whose left subtree and right subtree differ in height by at most 1 unit is called :

- (A) AVL tree
- (B) Red-black tree
- (C) Lemma tree
- (D) Unit Tree

58. The term gigabyte refers to :

- (A) 1024 bytes
- (B) 1024 kilobytes
- (C) 1024 megabytes
- (D) 1024 gigabyte

59. The left side of any binary number is called :

- (A) Least significant digit
- (B) Most significant digit
- (C) Medium significant digit
- (D) Low significant digit

60. A 16 bit address bus can generate \_\_\_\_\_ addresses.

- (A) 32767
- (B) 25652
- (C) 65536
- (D) 48353

Panjab University, Chandigarh  
CET(UG)-2015

FINAL ANSWERS / KEY

Subject: COMPUTER SCIENCE

Booklet Series Code: A

|    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|
| 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 |
| B  | D  | D  | D  | B  | A  | A  | C  | A  | D  |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| B  | A  | C  | D  | A  | A  | C  | X  | A  | A  |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| C  | D  | A  | C  | B  | D  | D  | A  | X  | B  |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| X  | A  | B  | A  | D  | B  | D  | A  | X  | B  |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| C  | X  | B  | D  | A  | B  | A  | C  | D  | C  |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| A  | B  | A  | B  | C  | D  | A  | C  | B  | C  |

**Note:** An 'X' in the key indicates that either the question is ambiguous or it has printing mistake. All candidates will be given credit for this question.