

BHEL Computer Science Question Paper

1. Which one of the following is provided by a data dictionary ?

- (A) User data (B) Functional data
- (C) Database structure data (D) Sorted data

2. Which one of the following is a direct benefit of database normalization ?

- (A) higher query processing efficiency (B) smaller number of tables
- (C) reduced I/O for most queries (D) reduced data redundancy

3. What is the result of the following SQL statement ?

```
SELECT A.Employee_Name, B.Spouse_Name  
FROM Employee A LEFT OUTER JOIN Spouse B  
ON A.Employee_ID = B.Employee_ID
```

- (A) A list of all employee's names, including the name of their spouse if they have one
- (B) A list of all employees that have spouses, with spouse names included in the list
- (C) A list of employee's spouses
- (D) Two lists : One list of employees, the other of spouses.

4. The ability to modify the conceptual schema without causing any change to the application program is known as :

- (A) Physical data independence (B) Logical data independence
- (C) External data independence (D) Static data

5. A field or a combination of fields that has a unique value is called :

- (A) Secondary key (B) Foreign key
- (C) Primary key (D) Alternate key

6. Relational operator that yields all values from all rows in a table is known as

- (A) difference (B) product
- (C) select (D) project

7. Referential integrity controls relationships between :

- (A) attributes in a table (B) operations of an object
- (C) instances of a class (D) tables in a database.

8. What will be suitable criteria that should be entered for a query to search for Employee Names beginning with M ?

- (A) Start with M (B) Like M
- (C) Like 'M?' (D) Like 'M*'

9. What rows will this select statement return ?

SELECT * FROM products WHERE ordernumber >= 1000

- (A) All rows in the products table whose order number is greater than or equal to 1000
- (B) All rows in the products table whose order number is less than or equal to 1000
- (C) The first 1000 rows of the product table
- (D) All rows in the products table whose order number is greater than 1000

10. A television broadcast is an example of _____ transmission.

- (A) Simplex (B) half-duplex
- (C) full-duplex (D) automatic

11. _____ is the protocol suite for the Internet which we use presently :

- (A) TCP/IP (B) NCP
- (C) UNIX (D) ACM

12. _____ switching is well suited for voice communication while _____ switching is better suited for data and other non-voice communication.

- (A) Message; circuit (B) Circuit; message
- (C) Packet; circuit (D) Circuit; packet

13. Forty-five physical channels link _____ devices arranged in a mesh topology.

- (A) NINE (9) (B) TEN (10)
- (C) FORTY (40) (D) FORTY-FIVE (45)

14. The most frequently used UTP connector is _____ .

- (A) category 5 connector (B) EIA 232
- (C) RJ45 (D) JR45

15. The natural mask for class C IP address is _____ .

- (A) 255.255.255.0 (B) 255.255.0.0
- (C) 255.0.0.0 (D) 255.255.255.255

16. The Internet began as an experimental network called

- (A) Intranet (B) ARPANET
- (C) ARPA (D) DoDNET

17. Clock speed is measured in

- (A) Bits per second (B) Baud
- (C) Bytes (D) Hertz

18. Cache memory enhances

- (A) Memory capacity (B) Memory access time
- (C) Secondary storage capacity (D) Secondary storage access time

19. A user complains that he has created a shell script 'myuse' that will report his usage of disk space by a directory in UNIX, but when he executes the script he only receives the message : myuse : cannot execute. What is the probable cause of the error described above ?

- (A) The file 'myuse' contains syntax errors
- (B) The file 'myuse' cannot be located because the user has not set his PATH properly
- (C) The user does not have permission to read his directory
- (D) The file mode for the owner of 'myuse' is not executable.

20. Three players A, B, C are in a race. A is twice as likely to win as B and B is twice as likely to win as C. Then the probability that B wins =

- (A) 1/2 (B) 2/3
- (C) 1/3 (D) 2/7

21. In following Java code snippet, what will be the output of following :

```
int var 1 = 5, var 2 = 7;  
System.out.println("Result=" + var 1 * var 3);
```

- (A) Result = 35 (B) Result = 57
- (C) Result = 3 (D) Error

22. Consider the following segment of a Java program,

```
int num, alpha = 10;  
num = 4;  
switch (num)  
{  
case 3 : alpha++; break;  
case 4 :  
case 6 : alpha = alpha + 3;  
case 8 : alpha = alpha + 4; break;  
default : alpha = alpha + 5;  
}
```

```
System.out.println (alpha);
```

What will the output be when the above segment is executed as a program ?

- (A) 15 (B) 16
- (C) 17 (D) 18

23. The region of memory sufficiently large to hold all pixels of the display is called a

- (A) Frame buffer (B) RAM
- (C) ROM (D) Cache Memory

24. Which of the following statements is correct regarding Bitmap images ?

- (A) They are based on lines and curves
- (B) They are best for real-world images like Photography and Painted pictures
- (C) They have a small data size
- (D) One does not need to compress the file for transferring.

25. is a process model used to show the flow of data through a system and the work or processing performed by the system :

- (A) Document Flow Diagram
- (B) Data Flow Diagram
- (C) Entity Relationship Diagram
- (D) Use Case Diagram.

26. Consider the following two relations :

A (Students) B

St_Id Name Address St_Id Name Address

1000000004 Ratan Mumbai 1000000001 Mahesh Gangtok

1000000001 Mahesh Gangtok 1000000002 Samir Indore

1000000008 Babita Delhi 1000000004 Ratan Mumbai

1000000002 Samir Indore 1000000008 Babita Delhi

Applying a certain SQL statement to relation A gives relation B. Which of the following statements could this SQL statement be ?

- (A) SELECT * FROM Students ORDER BY St_Id;
- (B) SELECT * FROM Students ORDER BY Name;
- (C) SELECT * FROM Students ORDER BY St_Id DESC;
- (D) SELECT * FROM Students ORDER BY Name DESC;

27. Consider the code snippet given below :

```
& lt H1 & gt Hello BIT & lt H1 & gt
```

Which of the following is correct in relation to the above code snippet ?

- (A) Hello BIT is displayed as the output with H1 font.
- (B) Hello BIT ; is displayed as the output with H1 font.
- (C) ; is displayed as the output with default font.
- (D)

Hellow BIT is displayed as the output.

28. When you are creating a structure in C/C++, you need to use the keyword

- (A) structure (B) object
- (C) struct (D) record

29. $54 _ _ 7 = 5$. Which arithmetic operator can replace the blank to make the statement correct ?

- (A) – (B) /
- (C) % (D) *

30. What is the output of the following code in C ?

```
for (int i = 0; i &lt; 10; i++)
{cout &&& i% 2 &&& " " ;}
(A) 0 1 2 3 4 5 6 7 8 9 (B) 0 2 4 6 8 10 12 14 16 18
(C) 10101010101 (D) 10 10 10 10 10
```

31. In C++, if a catch statement is written to catch exception objects of a base class type, it can also catch all _____ derived from that base class.

- (A) Exceptions for objects (B) Objects of classes
- (C) Arguments (D) Errors

32. The design of classes in a way that hides the details of implementation from the user is known as :

- (A) Encapsulation (B) Information Hiding
- (C) Data Abstraction (D) Reusability

33. Can two classes contain member functions with the same name ?

- (A) No.
- (B) Yes, but only if the two classes have the same name
- (C) Yes, but only if the main program does not declare both kinds
- (D) Yes, this is always allowed.

34. What is printed when the following sample code of C is executed ?

```
char *ptr;
char myString = "abcdefghijklmnp";
ptr = myString;
printf ("ptr=%s/n", ptr+5);
printf ("ptr = %s", ptr);
(A) ptr = fghijklmnp (B) ptr = fghijklmnp
ptr = fghijklmnp ptr = abcdefghijklmnp
(C) ptr = efgijklmnp (D) ptr = efgijklmnp
ptr = abcdefghijklmnp ptr = efgijklmnp
```

35. How many times will the "while" body be executed in the sampe code above ?

```
int ch = 10;
int ci = 15;
```

```
while (ch >= 'a' && ch <= 'z')
{
    cout << ch << endl ;
    ++ ch; -- ch ;
}
(A) 0 (B) 1
(C) 2 (D) 3
```

36. What standard include file is needed to use the exit () function ?

- (A) None (B) Stdlib.h
- (C) stdio.h (D) std.h

37. The processing speed of different computers is compared using :

- (A) RPM (B) GHz
- (C) MIPS (D) CPS

38. Who is associated with the development of 'C' language ?

- (A) Niklaus Wirth
- (B) Donald Knuth
- (C) Dennis M Ritchie
- (D) Charles Babbage.

39. Boolean expression for NAND gate with two inputs x and y can be written as :

- (A) $x - y$ (B) $x + y$
- (C) $x + y$ (D) $xy + xy$

40. Two's complement of 1011.01 is :

- (A) 0100.10 (B) 0100.11
- (C) 1011.10 (D) 0100.01

41. A friend function can be used to :

- (A) avoid arguments between classes
- (B) allow access to classes whose source code is unavailable
- (C) allow one class to access an unrelated class
- (D) increases the versatility of an overload operator

42. In TCP, which layer is not present ?

- (A) physical layer (B) data link layer
- (C) transport layer (D) session layer

43. The digit F in Hexadecimal system is equivalent to _____ in decimal system.

- (A) 16 (B) 15
- (C) 17 (D) 8

44. The output of a _____ gate is only 1 when all of its inputs are 1 :

- (A) NOR (B) XOR
- (C) AND (D) NOT

45. $110012 - 100012 =$

- (A) 10000 (B) 01000
- (C) 00100 (D) 00001

46. Which is correct :

- (A) $A \cdot A = 0$ (B) $A + 1 = A$
- (C) $A + A = A'$ (D) $A' \cdot A' = 0$

47. The basic storage element in a digital system is

- (A) flip flop (B) counter
- (C) multiplexer (D) encoder

48. $AB + AB' =$

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

49. In UNIX, which command is used to sort the lines of data in a file in reverse order

- (A) sort (B) sh
- (C) st (D) sort -r

50. The commonly used UNIX commands like date, ls, cat etc. are stored in

- (A) /dev directory (B) /bin directory
- (C) /tmp directory (D) /unix directory

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