

P.G. ENTRANCE EXAMINATION, APRIL 2022**COMPUTER SCIENCE**

Time : Two Hours

Maximum : 400 Marks

*Each question carries 4 marks.**1 mark will be deducted for each wrong answer.*

1. Which of the following function sets first n characters of a string to a given number ?
 - A) `strninit()`
 - B) `strnset()`
 - C) `strcset()`
 - D) `strset()`

2. Which header file should be included to use functions like `malloc()` and `calloc()` ?
 - A) `memory.h`
 - B) `string.h`
 - C) `dos.h`
 - D) `stdlib.h`

3. What will happen if in a C program you assign a value to an array element whose subscript exceeds the size of array ?
 - A) The element will be set to 0.
 - B) The program may crash if some important data gets overwritten.
 - C) The array size would appropriately grow.
 - D) The compiler would report an error.

4. In which stage the following code ?
`#include<stdio.h>` gets replaced by the contents of the file `stdio.h`
 - A) During editing.
 - B) During linking.
 - C) During execution.
 - D) During preprocessing.

5. Which of the following is not logical operator ?
 - A) `&`.
 - B) `&&`.
 - C) `||`.
 - D) `!`.

6. What is (void*)0 ?
- A) Representation of NULL pointer. B) Representation of void pointer.
C) Error. D) None of above.
7. Which of the following correctly shows the hierarchy of arithmetic operations in C ?
- A) /+ * - B) * -/+
C) + -/* D) /* + -
8. What are the different types of real data type in C ?
- A) Float, double. B) Short int, double, long int.
C) Float, double, long double. D) Double, long int, float.
9. The maximum combined length of the command-line arguments including the spaces between adjacent arguments is :
- A) 128 characters.
B) 256 characters.
C) 67 characters.
D) It may vary from one operating system to another.
10. What do the following declaration signify ?
`int *ptr[30] ;`
- A) ptr is a pointer to an array of 30 integer pointers.
B) ptr is a array of 30 pointers to integers.
C) ptr is a array of 30 integer pointers.
D) ptr is a array 30 pointers.
11. Who developed the basic architecture of computer ?
- A) Blaise Pascal. B) Charles Babbage.
C) John Von Neumann. D) None of the above.
12. A transformer :
- A) Steps up or down d.c. voltages. B) Changes a.c. to d.c.
C) Steps up or down a.c. voltages. D) Changes d.c to a.c.

13. Which process can be used in analyzing the set of possible designs ?
- A) Scheduling. B) Design space exploration.
C) Hardware / Software partitioning. D) Compilation.
14. The _____ process divides the disk into tracks and sectors.
- A) Initiation. B) Formatting.
C) Modification. D) Creation.
15. A combination of 16 bits is called _____.
- A) Nibble. B) Word.
C) Byte. D) Memory block.
16. The first instructor of bootstrap loader program of an operating system is stored ' in _____.
- A) BIOS. B) Hard disk.
C) RAM. D) ROM.
17. Which of the following is a volatile memory ?
- A) Cache memory. B) DVD.
C) CD. D) Hard-disk.
18. The error that can be pointed out by the compiler are :
- A) Internal error. B) Syntax error.
C) Logical error. D) Semantic error.
19. Which component of the computer consists of physical entity of the device ?
- A) Software. B) Hardware.
C) Middleware. D) Firmware.
20. The storage element employed in clocked sequential circuit is :
- A) Flip flop. B) Memory.
C) Circuit. D) Subtractor.

30. Which of the following option is not a core data type in the python language ?

- A) Dictionary.
- B) Lists.
- C) Class.
- D) All of the above.

31. Which of the following operators is the correct option for power (ab) ?

- A) $a \wedge b$.
- B) $a^{**}b$.
- C) $a^{^^}b$.
- D) $a^{^*}b$.

32. What will be the output of the following Python code ?

```
i - 1
while True :
    if i % 3 == 0:
        break
    print(i)
```

$i + = 1$

- A) 1 2 3.
- B) Error.
- C) 1 2.
- D) None of the mentioned.

33. Which one of the following given statements possibly contains the error ?

- A) Select * from emp where empid 10003.
- B) Select empid from emp where empid 10006.
- C) Select empid from emp.
- D) Select empid where empid 1009 and Lastname = 'GELLER'.

34. Which of the following can be used to extract or filter the data and information from the data warehouse ?

- A) Data redundancy.
- B) Data recovery tool.
- C) Data mining.
- D) Both B and C.

35. In general, a file is basically a collection of all related _____.

- A) Rows and Columns.
- B) Fields.
- C) Database.
- D) Records.

Turn over

36. Which one of the following keyword is used to find out the number of values in a column ?
- A) TOTAL.
 - B) COUNT.
 - C) SUM.
 - D) ADD.
37. Which component is used to compile, debug and execute the java programs?
- A) JRE.
 - B) JIT.
 - C) JDK.
 - D) JVM.
38. What is Truncation in Java ?
- A) Floating-point value assigned to a Floating type.
 - B) Floating-point value assigned to an integer type.
 - C) Integer value assigned to floating type.
 - D) Integer value assigned to floating type.
39. Which of these keywords is used to define interfaces in Java ?
- A) int f.
 - B) Int f.
 - C) interface.
 - D) Interface.
40. Which of the following is a superclass of every class in Java ?
- A) Array List.
 - B) Abstract class.
 - C) Object class.
 - D) String.
41. Which one of the following refers to the "data about data" ?
- A) Directory.
 - B) Sub Data.
 - C) Warehouse.
 - D) Meta Data.
42. Which of the following command is a type of Data Definition language command ?
- A) Create.
 - B) Update.
 - C) Delete.
 - D) Merge.
43. The database management system can be considered as the collection of _____ that enables us to create and maintain the database.
- A) Compilers.
 - B) Keys.
 - C) Programs.
 - D) Language activity.

44. Which one of the following commands is used to modify a column inside a table ?

- A) Drop.
- B) Update.
- C) Alter.
- D) Create.

45. The view of total database content is :

- A) Internal view.
- B) External view.
- C) Conceptual view.
- D) Physical view.

46. In hierarchical model, records are organized as :

- A) Tree.
- B) List.
- C) Graph.
- D) Links.

47. It is possible to design a complete schema using :

- A) VDL and DDL.
- B) SDL and DDL.
- C) DDL and DML.
- D) VDL and DML.

48. Which of the following is a valid SQL type ?

- A) FLOAT.
- B) CHARACTER.
- C) NUMERIC.
- D) All the above.

49. The given Query can also be replaced with :

1. SELECT name, course_id

FROM instructor, teaches

WHERE instructor ID = teaches_ID;

- A) Select name, course id from teaches, instructor where instructor id course id.
- B) Select name, course id from instructor natural join teaches.
- C) Select name, course id from instructor.
- D) Select course id from instructor join teaches.

73. Which of the following is the reversal law of transposes ?
- A) $(A - B)' = B' - A'$. B) $(AB)' = B'A'$.
- C) $(AB)' = (BA)'$. D) $(AB)' = B' + A'$.
74. Which of the following is the formula for calculating the inverse of the matrix ?
- A) $2/|A| \text{ adj } A$. B) $1/|A| \text{ adj } A$.
- C) $-1/|A| \text{ adj } A$. D) $1/|2A| \text{ adj } A$.
75. Which of the following functions is the solution of the differential equation $dy/dx + 2y = 0$?
- A) $y = -2e^{-x}$. B) $y = 2e^x$.
- C) $y = e^{-2x}$. D) $y = e^{2x}$.
76. Which of the following functions is a solution for the differential equation $y'' + 6y = 0$?
- A) $y = 5 \cos 3x$. B) $y = 5 \tan 3x$.
- C) $y = \cos 3x$. D) $y = 6 \cos 3x$.
77. If $a = i^{\wedge} + 4j^{\wedge}$ and $b = 3i^{\wedge} - 3j^{\wedge}$, Find the magnitude of $a + b$.
- A) $\sqrt{6}$. B) $\sqrt{11}$.
- C) $\sqrt{5}$. D) $\sqrt{17}$.
78. What is the mathematical expression for f is right continuous on (a, b) ?
- A) $\lim_{x \rightarrow a^+} f(x) = f(a)$. B) $\lim_{x \rightarrow a^+} f(x) = f(b)$.
- C) $\lim_{x \rightarrow b^+} f(x) = f(a)$. D) $\lim_{x \rightarrow a^-} \lim f(x) = f(a)$.
79. What are the kinds of discontinuity ?
- A) Minor and major kinds. B) Increment and decrement kinds.
- C) First and second kinds. D) Zero and one kinds.
80. What will be the equation of the normal to the hyperbola $xy = 4$ at the point $(2, 2)$?
- A) $x + y = 0$. B) $x - y = 0$.
- C) $2x - y = 0$. D) $x + 2y = 0$.

