

C 21135

(Pages : 14)

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) `strnset()`
 - 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) `!`

Turn over

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.









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)  $x + 2y = 0$



88. Let A and B be two events such that the occurrence of A implies occurrence of B, But not vice-versa, then the correct relation between  $P(A)$  and  $P(B)$  is ?
- A)  $P(A) < P(B)$                       B)  $P(B) \geq P(A)$ .  
C)  $P(A) = P(B)$ .                      D)  $P(A) \geq P(B)$ .
89. Find the number of ways of arranging the letters of the words DANGER, so that no vowel occupies odd place.
- A) 36.                                      B) 48.  
C) 144.                                     D) 96.
90. Three companies A, B and C supply 25%, 35% and 40% of the notebooks to a school. Past experience shows that 5%, 4% and 2% of the notebooks produced by these companies are defective. If a notebook was found to be defective, what is the probability that the notebook was supplied by A ?
- A)  $\frac{44}{69}$ .                                    B)  $\frac{25}{69}$ .  
C)  $\frac{13}{24}$ .                                     D)  $\frac{11}{24}$ .
91. Which of the following is not a form of Monosaccharide Sugar ?
- A) Glucose.                                B) Maltose.  
C) Fructose.                               D) Galactose.
92. \_\_\_\_\_ is an example of saturated hydrocarbon.
- A) Acetylene.                              B) Ethene.  
C) Ethane.                                  D) Propene.
93. The building block of protein molecules is \_\_\_\_\_.
- A) Formic acids.                          B) Fatty acids.  
C) Acetic acids.                          D) Amino acids.
94. The substance which has maximum calorific value is \_\_\_\_\_.
- A) Protein.                                 B) Amino acid.  
C) Fat.                                       D) Carbohydrate.

