

**ENTRANCE TEST FOR DIPLOMA HOLDERS – 2011**  
**COURSE : COMPUTER SCIENCE AND ENGINEERING**

**GROUP CODE : CS**

**VERSION CODE**

**A**

**Maximum Marks : 180**

**Maximum Time : 205 Minutes**

*(Including initial 25 minutes for filling Name, Admission Ticket No., Version Code and Serial Number in the OMR Answer Sheet and Question Booklet.)*

Please fill your Admission Ticket No. Below

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**INSTRUCTIONS TO CANDIDATES**

1. Do not remove the seal on the right side of this booklet during the first fifteen minutes after the 2<sup>nd</sup> bell at 2.00 P.M. You should not look inside the Question Booklet or start answering on the Answer Sheet during initial 10 minutes. Break the seal at the right side to open this booklet only after the 3<sup>rd</sup> bell at 2.10 P.M.
2. The initial fifteen minutes are meant for the candidates to enter Name, Admission Ticket No., Version code (should be shaded) and Serial No. on the Answer Sheet. As Answer Sheets are designed to suit the Optical Marks Reader (OMR) system, special care should be taken to fill those items accurately. **DO NOT DAMAGE OR MUTILATE THE TIMING MARKS ON THE OMR ANSWER SHEETS.**
3. The Question Booklet and OMR Answer Sheet are issued separately at the start of the examination.
4. This Question Booklet contains 180 questions, check whether 180 multiple choice questions are printed (40 in Applied Science, 40 in Applied Mathematics and 100 questions in Engineering Subject).
5. **Candidate must ensure that he/she has received the correct Question Booklet, corresponding to his/her branch of Engineering/Technology (Group code).**
6. **In case of any discrepancy, immediately exchange the Question Booklet by bringing the error to the notice of the Invigilator.**
7. During the subsequent 180 minutes :
  - (a) Read each question carefully.
  - (b) Determine the correct answer from the four available choices given under each question.
  - (c) **Completely darken/shade the relevant circle with a blue or black ink ballpoint pen against the question number on the Answer Sheet.**

**For Example :**

Q. No. 14 : The product of  $0.5 \times 0.05$  is : (1) 0.05 (2) 0.005 (3) 0.025 (4) 0.25  
As the correct answer is Option No. 3, the candidate should darken the circle corresponding to Option No. 3 completely with a blue or black ink ballpoint pen on the Answer Sheet.

①   ②   ●   ④

8. Please stop writing when the last bell rings at 5.10 P.M. Hand over answer paper set to the invigilator who will separate top sheet and will retain the same with him and return the bottom sheet replica to you to carry home.

**A**



9. The radius of the circle

$$x^2 + y^2 + 4x - 6y + 4 = 0 \text{ is}$$

- (1) ~~4~~ (2) 2  
 (3) 3 (4) 6

10. The acute angle between the straight lines  $3y - 4x - 2 = 0$  and  $x - 7y + 1 = 0$  is

- (1)  $\frac{\pi}{4}$  (2)  $\frac{\pi}{2}$   
 (3)  $\frac{\pi}{3}$  (4)  $\frac{\pi}{6}$

11. Numerical value of  $\operatorname{cosec}\left(\frac{5\pi}{3}\right)$  is

- (1)  $\frac{\sqrt{3}}{2}$  (2)  $\frac{-\sqrt{3}}{2}$   
 (3)  $\frac{-2}{\sqrt{3}}$  (4)  $\frac{2}{\sqrt{3}}$

12.  $\sin^2(45^\circ + A) + \sin^2(45^\circ - A)$  is equal to

- (1) 1 (2) -1  
 (3) 0 (4)  $\frac{1}{2}$

13.  $\tan 75^\circ$  is equal to

- (1)  $\frac{\sqrt{3}-1}{\sqrt{3}+1}$  (2)  $\frac{\sqrt{3}+1}{\sqrt{3}-1}$   
 (3)  $\frac{\sqrt{3}+1}{2\sqrt{2}}$  (4)  $\frac{\sqrt{3}-1}{2\sqrt{2}}$

14. The simplified answer of

$$\frac{\cos 7\theta - \cos 9\theta}{\sin 9\theta + \sin 7\theta} \text{ is}$$

- (1)  $\cos \theta$  (2)  $\tan \theta$   
 (3)  $\sin \theta$  (4)  $\cot \theta$

15.  $\sin^{-1}(\cos x)$  is equal to

- (1)  $x - \frac{\pi}{2}$  (2)  $\frac{\pi}{2}$   
 (3)  $x$  (4)  $\frac{\pi}{2} - x$

16.  $\frac{1 + \cos 2A}{\sin 2A}$  is equal to

- (1)  ~~$\cot A$~~  (2)  $\tan A$   
 (3)  $\sin A$  (4)  $\cos A$

17. The angle of elevation of the top of a tower at a distance of 75 m is  $60^\circ$ . The height of the tower is

- (1) 37.5 m (2)  $\frac{75}{\sqrt{2}}$  m  
 (3)  $\frac{75}{\sqrt{3}}$  m (4)  ~~$75\sqrt{3}$  m~~

18.  $\tan^{-1}\left(\frac{1}{2}\right) + \tan^{-1}\left(\frac{1}{3}\right)$  is equal to

- (1)  ~~$\frac{\pi}{4}$~~  (2)  $\frac{\pi}{3}$   
 (3)  $\frac{\pi}{6}$  (4)  $\frac{\pi}{2}$

19.  $\lim_{x \rightarrow 0} \frac{(1 - \cos 2x)}{x^2} =$

- (1) ~~2~~ (2) -2  
 (3) 1 (4) -1

20.  $\frac{d}{dx} (\log_e 3x) =$

- (1)  $3x$  (2)  $x$   
 (3)  ~~$\frac{1}{x}$~~  (4)  $-3x$

21. If  $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ , then  $\frac{dy}{dx}$  is

- (1)  ~~$\frac{-b^2x}{a^2y}$~~  (2)  $\frac{b^2x}{a^2y}$   
 (3)  $\frac{bx}{ay}$  (4)  $\frac{bx^2}{ay^2}$

22. If  $y = x^x$ , then  $\frac{dy}{dx} =$

(1)  $x^x (1 + \log x)$

(2)  $x (1 + \log x)$

(3)  $x^x (1 - \log x)$

(4)  $(1 + \log x)$

23. If  $y = a \cos mx + b \sin mx$ , then  $\frac{d^2y}{dx^2} =$

(1)  $m^2y$

(2)  $my^2$

(3)  $-m^2y$

(4)  $-my^2$

24. The equation of normal to the curve  $(3x^2 - xy + y^2) = 3$  at  $(1, 1)$

(1)  $x - 5y + 4 = 0$

(2)  $x - 5y - 4 = 0$

(3)  $x + 5y + 4 = 0$

(4)  $x + 5y - 4 = 0$

25. Slope of the tangent to the curve  $\sqrt{x} + \sqrt{y} = 5$  at  $(4, 5)$  is

(1)  $\frac{-5}{2}$

(2)  $\frac{5}{2}$

(3)  $\frac{-\sqrt{5}}{2}$

(4)  $\frac{\sqrt{5}}{2}$

26. The maximum value of the function  $x^3 - 18x^2 + 96x$ .

(1) 160

(2) 60

(3)  $\frac{1}{160}$

(4) 180

27.  $\int \sqrt{1 + \sin 2x} dx$  is equal to

(1)  $\sqrt{x + \cos 2x} + c$

(2)  $\sqrt{x - \cos 2x} + c$

(3)  $\cos x - \sin x + c$

(4)  $-\cos x + \sin x + c$

28.  $\int 3 \sin x \cdot \sec^4 x dx$  is

(1)  $\frac{1}{3} \sec^3 x + c$

(2)  $\sec^4 x + c$

(3)  $\sec^3 x + c$

(4)  $\frac{3}{4} \sec^4 x + c$

29.  $\int \frac{x^3 \tan^{-1}(x^4)}{1+x^8} dx$  is

(1)  $\tan^{-1}(x^4) + c$

(3)  $\frac{x^4 \tan^{-1}(x^4)}{4} + c$

(2)  $\frac{[\tan^{-1}(x^4)]^2}{8} + c$

(4)  $\frac{x^3 [\tan^{-1}(x^4)]^2}{2} + c$

30.  $\int x \sin x dx$  is equal to

(1)  $-x \cos x + \sin x + c$

(3)  $x \sin x - \cos x + c$

(2)  $x \cos x + \sin x + c$

(4)  $x \sin x + \cos x + c$

31.  $\int_0^{\pi} \sin^2 x dx$  is equal to

(1) 0

(3)  $\frac{\pi}{4}$

(2)  $\frac{\pi}{2}$

(4)  $\pi$

32. The area bounded by the curve  $y = x^2 + 1$ , the  $x$ -axis and the ordinates at  $x = 1$  and  $x = 3$  is

(1)  $\frac{40}{3}$  sq. units

(3)  $\frac{36}{3}$  sq. units

(2)  $\frac{26}{3}$  sq. units

(4)  $\frac{32}{3}$  sq. units

33. The differential equation of the function  $y = \sin mx$  is

(1)  $\frac{d^2y}{dx^2} + m^2 = 0$

(3)  $\frac{d^2y}{dx^2} - m^2 = 0$

(2)  $\frac{d^2y}{dx^2} + m^2y = 0$

(4)  $\frac{d^2y}{dx^2} - m^2y = 0$

34. The solution of differential equation  $\frac{dy}{dx} + \frac{y}{x} = 0$  is

(1)  $xy = c$

(3)  $x + y = c$

(2)  $\log(xy) = 0$

(4)  $\frac{y}{x} = c$

35. If  $A = \begin{bmatrix} 1 & a & -b \\ -a & 1 & c \\ b & -c & 1 \end{bmatrix}$ ,

then  $\Delta A =$

- (1)  $a^2 + b^2 + c^2$  (2)  $a^2 - b^2 - c^2$   
~~(3)  $1 + a^2 + b^2 + c^2$~~  (4)  $a + b + c + 1$

36. Solve for 'x'

$$5y + 2x + z + 1 = 0$$

$$x + 7y - 6z + 18 = 0$$

$$3y + 6z = 9$$

- ~~(1) 1~~ (2) -1  
 (3) 2 (4) -2

37. Name the matrix

$$\begin{bmatrix} 0 & 2 & -3 \\ -2 & 0 & -4 \\ 3 & 4 & 0 \end{bmatrix}$$

- (1) Conjugate (2) Skew symmetric  
 (3) Transpose (4) Singular

38. Find the adjoint by Matrix method.

$$x + y = 3$$

$$x - y = 1$$

- (1)  $\begin{bmatrix} 1 & 1 \\ 1 & -1 \end{bmatrix}$  (2)  $\begin{bmatrix} 1 & 3 \\ 1 & 1 \end{bmatrix}$   
 (3)  $\begin{bmatrix} 1 & 3 \\ -1 & 1 \end{bmatrix}$  ~~(4)  $\begin{bmatrix} -1 & -1 \\ -1 & 1 \end{bmatrix}$~~

39. Find cofactor of -2 in the square matrix given below :

$$\begin{bmatrix} 2 & 3 & -1 \\ -1 & 0 & 5 \\ 4 & 1 & -2 \end{bmatrix}$$

- (1) -5 (2) 0  
 (3) -1 ~~(4) 3~~

40. If  $\begin{bmatrix} 1 & 0 \\ y & 5 \end{bmatrix} + 2 \begin{bmatrix} x & 0 \\ -1 & -2 \end{bmatrix} = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$  find x, y.

- ~~(1) 0, 2~~ (2) 2, 0  
 (3) 2, 2 (4) 0, 0

41. A body of mass 1 kg whirled round in a circle of diameter 9 m with a velocity of 3 m/s then the centripetal force on it is
- (1) 27 N (2) 3 N  
(3) 2 N (4) 1 N
42. The relation between angular velocity ( $\omega$ ) and inner velocity ( $v$ ) is
- (1)  $\omega = r \cdot v$  (2)  $v = r \cdot \omega$   
(3)  $v^2 = r \cdot \omega$  (4)  $\omega^2 = r \cdot v$
43. The gravitational constant is equal to
- (1)  $6.67 \times 10^{11} \text{ N} \cdot \text{m}^2/\text{kg}^2$   
(2)  $6.67 \times 10^{-11} \text{ N} \cdot \text{m}^2/\text{kg}^2$   
(3)  $66.7 \times 10^{-11} \text{ N} \cdot \text{m}^2/\text{kg}^2$   
(4)  $66.7 \times 10^{11} \text{ N} \cdot \text{m}^2/\text{kg}^2$
44. Acceleration due to gravity decreases as the height
- (1) decreases (2) increases  
(3) becomes zero (4) None
45. The escape velocity of satellite is
- (1) 1.12 km/sc (2) 112.2 km/s  
(3) 11.2 km/s (4) 1.122 km/s
46. The expression connecting force, displacement and work is
- (1)  $W = \frac{S}{F}$  (2)  $F = SW$   
(3)  $F = \frac{W}{S}$  (4)  $W = \frac{F}{S}$



47. If the velocity of a body is doubled, then its K.E.
- (1) becomes twice (2) becomes half  
(3) remains same  (4) increases by four times
48. Energy required to lift 100 kg mass through a height of 1 m is
- (1) 0.098 kJ  (2) 0.98 kJ  
(3) 98 kJ (4) 9.8 kJ
49. The resultant of two forces P, Q acting at  $90^\circ$  to each other is
- (1)  $P + Q$  (2)  $P - Q$   
 (3)  $\sqrt{P^2 + Q^2}$  (4)  $\sqrt{P^2 - Q^2}$
50. Moment of a force is positive if the body move in
- (1) Parallel Direction  (2) Anticlockwise Direction  
(3) Perpendicular Direction (4) Clockwise Direction
51. The algebraic sum of moment of force about any point in their plane is
- (1) more than zero  
(2) less than zero  
(3) equal to their resultant  
 (4) equal to moment of their resultant about the same point
52. A vector is completely described by
- (1) Its magnitude (2) Its direction  
 (3) Its magnitude and direction (4) Neither magnitude nor direction
53. The power developed when a constant couple of 50 Nm. rotates a shaft at 120 rpm is
- (1) 62.8 kW (2) 628 kW  
(3) 6.28 kW  (4) 0.628 kW

54. The relation between Celsius and Fahrenheit scale is

(1)  $C = (9/5)(F - 32)$

(2)  $F = (9C/5) + 32$

~~(3)  $C = (5/9)(F - 32)$~~

(4)  $F = (9C / 5) - 32$

55. The following is not the application convention :

(1) Land and sea breeze

(2) Ventilators

(3) Cooling system in automobiles

~~(4) Davy's safety lamp~~

56. Fastest mode of transfer of heat is

(1) Conduction

(2) Convection

~~(3) Radiation~~

(4) Transmission

57. The temperature of the gas is 300 K at a pressure keeping volume constant the pressure is increased 4 times, its new temperature is

(1) 720 °K

(2) 1200 °C

~~(3) 1200 °K~~

(4) 720 °C

58. Bicycle chain is an example for

~~(1) Tensile strain~~

(2) Volume strain

(3) Shear strain

(4) Compressive strain

59. When small piece of camphor is dropped into water, the piece move randomly because of

(1) increase in surface tension

~~(2) decrease in surface tension~~

(3) constant surface tension

(4) zero surface tension

60. The SI unit of co-efficient of viscosity is

~~(1)  $\frac{Ns}{m^2}$~~

(2)  $\frac{Nm^2}{s}$

(3)  $\frac{Ns}{m}$

(4)  $\frac{Nm}{s}$

61. A wire of stress  $650 \text{ N/m}^2$  with an area of cross section of wire is  $500 \text{ m}^2$  the maximum force that the wire can withstand is
- (1)  $325 \times 10^{10} \text{ N}$                        (2)  $3.25 \times 10^5 \text{ N}$   
 (3)  $3.25 \times 10^{11} \text{ N}$                       (4)  $3.25 \times 10^9 \text{ N}$
62. Water rises to a height of 4 cm in a capillary tube. If the radius is reduced to half, the water rises to a height of
- (1) 2 cm                                      (2) 4 cm  
 (3) 6 cm                                       (4) 8 cm
63. The maximum displacement of the vibrating body from its mean position is
- (1) Amplitude                              (2) Frequency  
 (3) Oscillation                              (4) Period
64. Distance between a node and antinode is
- (1)  $\lambda$     (2)  $\frac{\lambda}{2}$   
 (3)  $\frac{\lambda}{3}$      (4)  $\frac{\lambda}{4}$
65. The super-position of two waves with nearly same frequency and same amplitude constitute
- (1) Resonance                               (2) Beats  
 (3) Interference                              (4) Polarisation
66. The minimum distance between sound & reflecting surface to observe echo is
- (1) 17 km                                       (2) 17 m  
 (3) 70 km                                      (4) 70 m
67. Acceleration of a body performing SHM is maximum at
- (1) left extreme position                      (2) right extreme position  
 (3) both (1) and (2)                       (4) at mean position



74. A scale divided into half mm and having a vernier containing 20 divisions has a LC of
- (1) 0.01 cm (2) 0.05 cm  
(3) 0.025 cm (4)  0.0025 cm
75. The prefix  $10^{-9}$  stands for
- (1) Tera (2)  Nano  
(3) Mega (4) Giga
76. The dimension formula for surface tension is
- (1)  $[ML^0 T^{-2}]$  (2)  $[ML^{-1} T^{-2}]$   
(3)  $[ML^2 T^2]$  (4)  $[M^0 L T^{-2}]$
77. The value of acceleration due to gravity in S.I. unit is
- (1) 980 dynes (2) 980 Newtons  
(3) 9.8 dynes (4)   $9.8 \text{ m/s}^2$
78. A 8 N force acting on a 4 kg mass can impart to it an acceleration of
- (1)  $2 \text{ m/s}^2$  (2)  $4 \text{ m/s}^2$   
(3)  $32 \text{ m/s}^2$  (4)  $\frac{1}{2} \text{ m/s}^2$
79. The product of mass and velocity of a body is
- (1) Force (2) Impulse  
 (3) Momentum (4) Work
80. Recoil of a gun is an example for Newton's
- (1) First Law (2) Second Law  
 (3) Third Law (4) None

81. How many times the program will print "India BIX" ?

```
#include <stdio.h>
int main( )
{
    printf("India BIX");
    main();
    return();
}
```

- (1) Infinite times (2) 32767 times  
 (3) 65535 times  (4) Till stack doesn't overflow

82. Which of the following correctly shows the hierarchy of arithmetic operations in C ?

- (1) 1 + \* - (2) \* - 1 +  
 (3) + - 1 \*  (4) 1 \* + -

83. Which of the following is the correct usage of conditional operators used in C ?

- (1) a > b ? c = 30 : c = 40;  
 (2) a > b ? c = 30;  
 (3) max = a > b ? a > c ? a : c : b > c ? b : c  
 (4) return (a > b) ? (a : b)

84. Array subscripts in C always start at

- (1) -1 (2) 1  
 (3) 0 (4) Value provided by users

85. enum colors {BLACK, BLUE, GREEN}

```
main( )
{
    printf ("%d,%d,%d",BLACK,BLUE,GREEN);
    return(1);
}
```

- (1) BLACK BLUE GREEN (2) Memory Address  
 (3) 0 1 2 (4) None of these



90. Which of the following is not a limitation of binary search algorithm ?
- (1) Must use a sorted array.
  - (2) Requirement of stored array is expensive when a lot of insertion and deletions are needed.
  - (3) There must be a mechanism to access middle element directly.
  - (4) Binary search algorithm is not efficient when the data elements are more than 1000.
91. When in order traversing a tree resulted E A C K F H D B G, the preorder traversal would return ?
- (1) F A E K C D B H G
  - (2) F A E K C D H G B
  - (3) E A F K H D C G B
  - (4) F E A K D C H B G
92. Evaluate the following prefix expression :
- \* / - \* 62426
- (1) 23
  - (2) 24
  - (3) 25
  - (4) 37
93. A linear list in which elements can be added or removed at either end but not in middle is known as
- (1) queue
  - (3) deque
  - (2) stack
  - (4) tree
94. The average number of comparisons in sequential search is
- (1)  $n^2$
  - (2)  $\frac{n(n-1)}{2}$
  - (3)  $\frac{n(n+1)}{2}$
  - (4)  $\frac{n+2}{2}$
95. The complexity of Bubble sort algorithm is
- (1)  $O(n)$
  - (3)  $O(n^2)$
  - (2)  $O(\log n)$
  - (4)  $O(n \log n)$
96. The number of swappings needed to sort the number 8, 22, 7, 9, 31, 19, 5, 13 in ascending order using bubble sort is
- (1) 11
  - (2) 14
  - (3) 12
  - (4) 6



97. What is the maximum total number of nodes in a tree that has N levels? Note that the root is 'level zero'.

(1)  $2^{2N}$

(2)  $2^{N+1} - 1$

(3)  $2^N - 1$

(4)  $2^N - 2N$

98. Identify the outlier with respect to operator over loading :

 (1) ?:

(2) &gt;

(3) ++

(4) !=

99. Predict the output when the following code is compiled and executed :

```
#include <iostream.h>
```

```
void main( )
```

```
{
```

```
int x = 4, y;
```

```
y = (x > 4) ? 99.99 : 9;
```

```
cout <<"value is" <<y<<endl;}
```

(1) Value is 99.99

 (2) Value is 9

(3) Value is 9.0

(4) Value is 99

100. The ability of an object to exhibit different behaviours in response to the same message is called

(1) Encapsulation

 (2) Polymorphism

(3) Synchronization

(4) Abstraction

101. The value of x is always thrice that of y. What is the value of x & y after executing the following code ?

```
While (x != y)
```

```
{
```

```
if (x > y)
```

```
x = x - y;
```

```
else
```

```
    y -= x;
```

```
}
```

 (1)  $x = y$ (2)  $x = y = 0$ (3)  $x \geq 2 \geq y$ 

(4) None of the above

102. The classes with pure virtual functions are called

- (1) virtual (2) imaginary  
(3) absolute  (4) abstract

103. If class one has to access the private data members of class two, then the friend declaration should be given in

- (1) class one  (2) class two  
(3) the main function (4) both class one and class two

104. In C++, when accessing a structure member, the identifier to the left of the dot operator is name of

- (1) The keyword struct  (2) A structure variable  
(3) A structure tag (4) All of the above

105. Consider the following code :

```
#include <iostream.h>
int add (int, int, int);
void main( )
{
cout <<add(15,16);
}
int add (int i = 0; int j = 0; int k = 0)
{
return i + j + k;
}
```

- (1) No output  (2) 31  
(3) 1 (4) 0

106. The member function can always access the data

- (1) in the object of which it is a member.  
(2) in the class of which it is a member.  
(3) in any object of the class of which it is a member.  
(4) in the public part of its class.

107. The method for adding released memory to the free pool, through deletion is called

- (1) Free storage list
- (2) Node
- (3) Garbage collection
- (4) Static memory allocation

108. Network cable lies on \_\_\_\_\_ layer.

- (1) Application
- (2) Network
- (3) Physical
- (4) Data link

109. Which connector STP uses ?

- (1) BNC
- (2) RJ-11
- (3) RJ-45
- (4) RJ-69

110. What is the central device in star topology ?

- (1) STP server
- (2) Hub/Switch
- (3) PDC
- (4) Router

111. Communication circuits that transmit data in both directions but not at the same time are operating in

- (1) a simplex mode
- (2) a half duplex mode
- (3) a full duplex mode
- (4) an asynchronous mode

112. What is the commonly used unit for measuring the speed of data transmission ?

- (1) Bytes per second
- (2) Baud
- (3) Bits per second
- (4) Either (2) or (3)

113. Error detection at the data link level is achieved by

- (1) Bit stuffing
- (2) Hamming codes
- (3) Cyclic redundancy code
- (4) Equalization

114. Which of the following medium access control technique is used for bus/tree ?

- (1) Token ring
- (2) Token bus
- (3) CSMA
- (4) MAC

115. Each computer connected to the internet must

- (1) be an IBM PC
- (2) have a unique IP address
- (3) be internet compatible
- (4) have a modem connection

116. By an intranet mean

- (1) a LAN of an organization
- (2) a Wide Area Network connecting all branches of an organization
- (3) a corporate computer network
- (4) a network connecting all computers of an organization and using the internet protocol

117. Internet is

- (1) a local computer network.
- (2) a world wide network of computers.
- (3) an interconnected network of computers.
- (4) a world wide interconnected network of computers which use a common protocol to communicate with one another.

118. A relationship is

- (1) an item of an application
- (2) a meaningful dependency between entities
- (3) a collection of related entities
- (4) related data

119. By relation cardinality we mean

- (1) number of items in a relationship
- (2) number of relationships in which an entity can appear
- (3) number of items in an entity
- (4) number of entity sets which may be related to a given entity

120. Rows of a relation are called

- (1) tuples
- (2) a relation row
- (3) a data structure
- (4) an entity

121. The PROJECT command will create new table that has

- (1) more fields than the original table
- (2) more rows than the original table
- (3) rows from the original table depending on selection condition
- (4) both (1) and (2)

122. An attribute of one table matching the primary key of another table is called as

- (1) Foreign key
- (2) Secondary key
- (3) Candidate key
- (4) Composite key

123. Describe the three levels of data abstraction

- (1) Physical level
- (2) Logical level
- (3) View level
- (4) All of these

124. Find the odd one out of the following :

- (1) OPEN
- (2) CLOSE
- (3) INSERT
- (4) FETCH

125. The SQL keyword used to limit column values to specific values is

- (1) CONSTRAINT
- (2) CHECK
- (3) NOT NULL
- (4) UNIQUE

126. Which SQL statement is used to retrieve view instances ?

- (1) CREATE
- (2) DELETE
- (3) INSERT
- (4) SELECT

127. Which of the following is not a data anomaly ?

- (1) Modification
- (2) Insertion
- (3) Deletion
- (4) Correction

128. A set of SQL statements stored in an application written in a standard programming language is called

- (1) a CHECK constraint  
(2) a view  
 (3) embedded SQL  
(4) a stored procedure

129. Access right to a database is controlled by

- (1) top management  
(2) system designer  
(3) system analyst  
 (4) database administrator

130. By redundancy in a file based system we mean that

- (1) unnecessary data is stored  
 (2) same data is duplicated in many files  
(3) data is unavailable  
(4) files have redundant data

131. A relation is said to be in BCNF when

- (1) it has overlapping composite keys  
(2) it has no composite keys  
(3) it has no multivalued dependencies  
 (4) it has no overlapping composite keys which have related attributes

132. An attribute  $y$  may be functionally dependent on

- (1) composite attribute  $x, y$   
(2) a single attribute  $x$   
(3) no attribute  
 (4) both (1) and (2)

133. Anne wants to create a public class named Myclass in her Java program. Which one of the following syntax should she use ?

- (1) Public class Myclass [11.code];  
(2) Public class Myclass [11 code]  
(3) Public class Myclass {11 code};  
 (4) Public class Myclass {11code}

134. Consider the following code :

```
class First
{
int i;
int j;
int k;
}
```

to create an object of the class. Which one of the following options should use to create the object ?

- (1) First f = First();                      (2) First f = First;  
(3) First f = new First;                     (4) First f = new First ( );

135. Identify the superclass of all errors and exceptions in the Java language.

- (1) Exception    (2) Error  
 (3) Throwable    (4) Runnable

136. When an applet begins, the AWT calls the following methods in a sequence. Identify the correct sequence in which it calls.

- (1) init( ), start( ) and paint( )  
(2) start( ), init( ) and paint( )  
(3) init( ), paint( ) and start( )  
(4) start( ), paint( ) and init( )

137. By default; graphics objects are drawn in the current foreground color. You can change this color by calling a method in Graphics class. Identify the method which is used here.

- (1) void get color( );  
 (2) void set color(color new color);  
(3) int set RGB( );  
(4) int get RGB( );

138. Identify the interface which does not define any constants or methods, but exists only to identify the interfaces that process events.

- (1) Action Listener    (2) Item Listener  
(3) Key Listener     (4) Event Listener

139. Which of the following is the correct method of defining a class as abstract ?

- (1) 

```
class Myclass
{
    abstract method( );
}
```
- (2) 

```
abstract Myclass
{
}
```
- (3) 

```
abstract class Myclass
{
    abstract void method( );
}
```
- (4) 

```
class abstract Myclass
{
    abstract void method( );
}
```

140. An instance method is

- (1) a static method
- (2) an abstract method
- (3) a non-public method
- (4) a non-static method

141. Which is the encryption technology used in the HTTP protocol ?

- (1) Secure sockets layer
- (2) Server side include
- (3) Cookies
- (4) Hidden fields

142. Which method is invoked by a Servlet to process a client request ?

- (1) service( )
- (2) destroy( )
- (3) init( )
- (4) doGet( )

143. Web browsers and web servers communicate with each other through a communication protocol called

- (1) FTP
- (2) SMTP
- (3) HTTP
- (4) Telnet



144. A self contained unit that performs a specific set of functions and has well defined interface is
- (1) block
  - (2) program
  - (3) component
  - (4) code
145. VB scripts supports only one data type called
- (1) variant
  - (2) empty
  - (3) integer
  - (4) double
146. Active server pages are browser
- (1) dependent
  - (2) independent
  - (3) fixed
  - (4) based
147. The \_\_\_\_\_ method of server object lets you create an instance of objects that are not already built into ASPs.
- (1) create object
  - (2) execute
  - (3) map path
  - (4) transfer
148. Contention is
- (1) one or more conductors that serve as a common connection for a related group of devices.
  - (2) a continuous frequency capable of being modulated or impressed with a second signal.
  - (3) the condition when two or more stations attempt to use the same time.
  - (4) a collection of interconnected functional units that provides a data communications service among stations attached to the network.
149. How many bits internet address is assigned to each host on a TCP/IP internet which is used in all communication with the host ?
- (1) 16 bits
  - (2) 32 bits
  - (3) 48 bits
  - (4) 64 bits
150. ICMP (Internet Control Message Protocol) is a protocol
- (1) used to dynamically bind a high level IP Address to a low-level physical hardware address.
  - (2) for transferring files from one machine to another.
  - (3) used to monitor computers.
  - (4) that handles error and control messages.

## 151. ALOHA

- (1) use for channel allocation problem
- (2) is use of data transfer
- (3) is buffering
- (4) all of the above

## 152. CSMA/CD

- (1) is an important protocol
- (2) is IEEE 802.3 (Ethernet)
- (3) Both (1) and (2)
- (4) None of the above

## 153. UNIX operating system

- (1) is multiuser
- (2) is multitasking
- (3) can run on PCs and larger system
- (4) All of the above

## 154. A computer cannot "boot" if it does not have

- (1) Compiler
- (2) Loader
- (3) Operating System
- (4) Assembler

## 155. The Operating System manages

- (1) Memory
- (2) Processor
- (3) Disk and I/O devices
- (4) All of the above

## 156. Which of the following is a type of systems software used on Micro computer ?

- (1) MS-DOS
- (2) PC-DOS
- (3) UNIX
- (4) All of the above

## 157. While running DOS on a PC, which command would be used to duplicate the entire diskette ?

- (1) COPY
- (2) DISKCOPY
- (3) CHKDSK
- (4) TYPE

158. A group of Flip-flops that store digital data  
 (1) code ~~(2) register~~  
 (3) variations (4) bit
159. The decimal number for octal 74(8) is  
 (1) 74 ~~(2) 60~~  
 (3) 22 (4) 62
160. The binary equivalent of the octal number 13.54 is  
~~(1) 1011.1011~~ (2) 1101.1110  
 (3) 1001.1110 (4) None of the above
161. Which of the following is termed as minimum error code?  
 (1) Binary code ~~(2) Gray code~~  
 (3) Excess-3 code (4) Octal code
162. The most widely used bipolar family is  
 (1) DTL ~~(2) TTL~~  
 (3) ECL (4) MOS
163. In which of the following gates the output is high if and only if all inputs are high?  
 (1) NOT ~~(2) AND~~  
 (3) OR (4) XOR
164. The simplification of  $AB + BC + BC$  gives  
~~(1)  $AB + BC$~~  (2)  $AB + CB$   
 (3)  $BC + BC$  (4)  $AB$
165. What is the Boolean equation for



- (1)  $y = A + B$  (2)  $y = AB$   
 (3)  $y = \overline{AB}$  ~~(4)  $y = \overline{A + B}$~~

166. Which of the following input combinations is not allowed in an SR flip-flop ?
- (1)  $S = 0, R = 0$  (2)  $S = 0, R = 1$   
(3)  $S = 1, R = 0$  (4)  $S = 1, R = 1$
167. A logic gate has four inputs. The total number of possible input combinations is
- (1) 4 (2) 8  
(3) 16 (4) 32
168. Which of the following registers is loaded with the contents of the memory location pointed by the program counter ?
- (1) Memory Address Register (2) Memory Data register  
(3) Instruction Register (4) Scratch Pad
169. Branch instructions are used to
- (1) manipulate numeric data (2) logical data  
(3) transfer control (4) manage data
170. Micro instructions are stored in the
- (1) internal storage (2) external storage  
(3) cache (4) control memory
171. Instruction PUSH and POP uses
- (1) Program counter (2) Instruction register  
(3) Stack pointer (4) None of above
172. Pipeline processing implement
- (1) fetch instruction (2) decode instruction  
(3) fetch operand (4) All of the above
173. In immediate addressing the literal is placed
- (1) in the CPU register (2) after operand in the instruction  
(3) in the memory (4) in the stack
174. When a subroutine is called, the address of the instruction following the call instruction is stored in/on the
- (1) stack pointer (2) accumulator  
(3) program counter (4) stack

175. A time sharing system implies

- (1) more than one processor in the system
- (2) more than one program in memory
- (3) more than one memory in the system
- (4) none of the above

176. A given memory chip has 12 address pins and 4 data pins. It has the following number of locations :

- (1)  $2^4$
- (2)  $2^{12}$
- (3)  $2^{48}$
- (4)  $2^{16}$

177. RAM is called DRAM (Dynamic RAM) when

- (1) it is always moving around data
- (2) it requires periodic refreshing
- (3) it can do several things simultaneously
- (4) none of the above

178. Which of the following is not user defined data type ?

- (1) struct bank

```
{
    char name[10];
    float price;
    int pages;
};
```

- (2) long int l = 2.35;
- (3) enum day {Sun, Mon, Tue, Wed};
- (4) none of above

179. In which header file is the Null macro defined ?

- (1) stdio.h
- (2) stdio.h and stddef.h
- (3) stddef.h
- (4) stdlib.h

180. Header files in 'C' contains

- (1) Computer commands
- (2) Library functions
- (3) Operators for files
- (4) Header information of C program

CS

**Space For Rough Work**