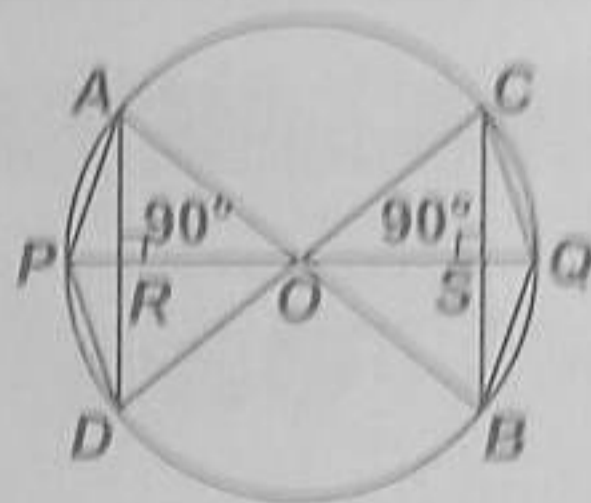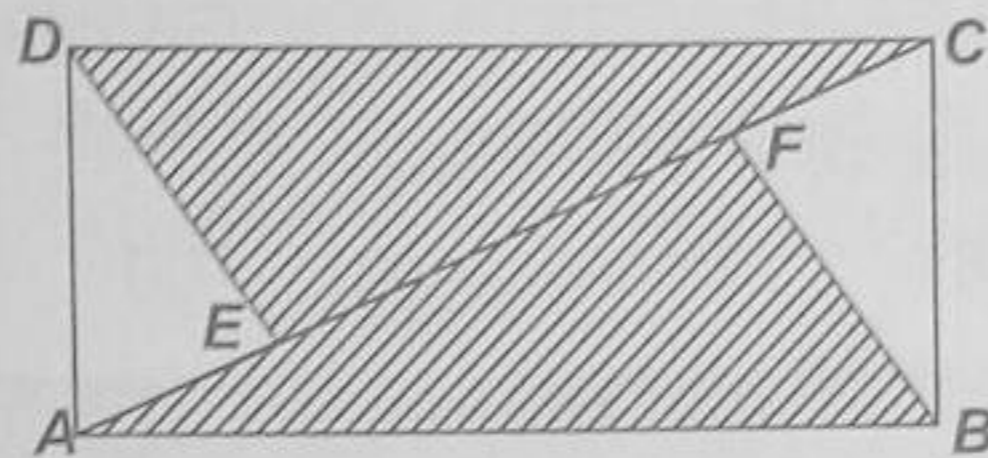1. In the given figure, O is the centre of the circle where $\angle AOD = 120°$. If the radius of the circle be 'r', then the sum of the areas of quadrilaterals $AODP$ and $OBQC$ is (figure not drawn to scale) ____.

(A) $\dfrac{\sqrt{3}}{2}r^2$

(B) $3\sqrt{3}r^2$

(C) $\sqrt{3}r^2$

(D) None of these

2. An A.P. whose first term is unity and in which the sum of the first half of terms to that of the second half of the same number of terms is in constant ratio, the common difference 'd' is _____.

(A) 1

(B) 2

(C) 3

(D) 4

3. There are 5 different boxes and 7 different balls. All the 7 balls are to be distributed in the 5 boxes placed in a row so that any box can receive any number of balls. Suppose all the balls and all the boxes are also identical. Then in how many ways can all these balls be distributed into these boxes?

(A) 12

(B) 13

(C) 16

(D) 255

4. Out of 13 applicants for a job, there are 5 women and 8 men. It is desired to select 2 persons for the job. The probability that atleast one of the selected person will be a woman is _____.

(A) $\dfrac{25}{39}$

(B) $\dfrac{31}{65}$

(C) $\dfrac{25}{69}$

(D) $\dfrac{5}{13}$

5. A survey shows that 41%, 35% and 60% of the people watch "Star Plus," Sony T.V" and "Zee T.V" respectively. 27% people watch exactly two of the three channels and 3% watch none. What percentage of people watch all the three channels?

   (A) 40% (B) 6% (C) 9% (D) None of these

6. If α and β are the roots of the equation $x^2 - px + q = 0$, then the quadratic equation, the roots of which are $(\alpha^2 - \beta^2)(\alpha^3 - \beta^3)$ and $(\alpha^3\beta^2 + \alpha^2\beta^3)$ is _____.

   (A) $px^2 - (5p + 7q)x - (p^6q^6 + 4p^2q^6) = 0$

   (B) $x^2 - (p^5 - 5p^3q + 5pq^2)x + (p^6q^2 - 5p^4q^3 + 4p^2q^4) = 0$

   (C) $x^2 - (p^3q - 5p^5 + p^4q)x - (p^6q^2 - 5p^2q^6) = 0$

   (D) All of these

7. $ABCD$ is a rectangle of dimensions $6\ cm \times 8\ cm$. DE and BF are the perpendiculars drawn on the diagonal of the rectangle. What is the ratio of the shaded to that of unshaded region ?

   (A) $7:3$ (B) $16:9$ (C) $4:3\sqrt{2}$ (D) Data insufficient

8. Assume that a mango and its seed, both are spherical in shape. Now if the radius of seed is $\frac{2}{5}$ of the thickness of the pulp and the seed lies exactly at the centre of the fruit, what percent of the total volume of the mango is its pulp?

   (A) $63\frac{3}{5}\%$ (B) 97.67% (C) $68\frac{2}{3}\%$ (D) None of these

9. If $\dfrac{\cos^4 x}{\cos^2 y} + \dfrac{\sin^4 x}{\sin^2 y} = 1$, then $\dfrac{\cos^4 y}{\cos^2 x} + \dfrac{\sin^4 y}{\sin^2 x}$ is equal to _____.

   (A) -1 (B) 1 (C) 0 (D) 2

10. Which of the following expressions is true?

    (A) $2 + 3i > 1 + 4i$ (B) $6 + 2i > 3 + 3i$

    (C) $5 + 8i > 5 + 7i$ (D) None of these

LOGICAL AND ANALYTICAL REASONING

11. If '$\div$' implies '$=$', '$\times$' implies '$<$', '$+$' implies '$>$', '$-$' implies '$\times$', '$>$' implies '$\div$', '$<$' implies '$+$', '$=$' implies '$-$', which of the following expressions is correct ?

    (A) $1 - 3 > 2 + 1 - 5 = 3 - 1 < 2$

    (B) $1 - 3 > 2 + 1 \times 5 = 3 \times 1 > 2$

    (C) $1 \times 3 > 2 + 1 \times 5 \times 3 - 1 > 2$

    (D) $1 - 3 > 2 + 1 \times 5 + 3 - 1 > 2$

12. An egg vendor calls on his first customer and sells half his eggs and half an egg. To the second customer, he sells half of what he was left with and half an egg, and to the third customer, he sells half of what he was then left with and half an egg. However, he did not break any egg. If in the end, the vendor was left with three eggs, how many eggs did he have initially?

(A) 26   (B) 31   (C) 39   (D) None of these

13. Arrange the following items from general to particular.

1. Animal   2. Feline   3. Leopard   4. Mammal

5. Vertebrate

(A) 1, 2, 3, 4, 5   (B) 1, 3, 5, 4, 2   (C) 1, 4, 3, 2, 5   (D) 1, 5, 4, 2, 3

14. In the following series, the number of letters skipped in between the adjacent letters are in ascending order, i.e., 1, 2, 3, 4. Which one of the following letter groups does not obey this rule?

(A) CEHLQ   (B) DFIMR   (C) GILPU   (D) HJMPT

15. If 2 = 5, 4 = 18, 6 = 39, then 10 = ?

(A) 45   (B) 81   (C) 100   (D) 105

16. Study the given table and choose the option which can best replace the sign of interrogation (?).

1	2	3	2	10	12
2	5	12	10	16	13
1	2	1	?	10	24

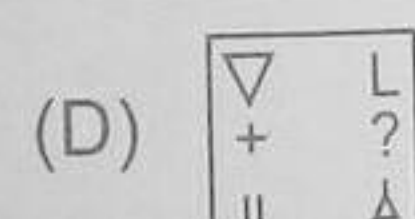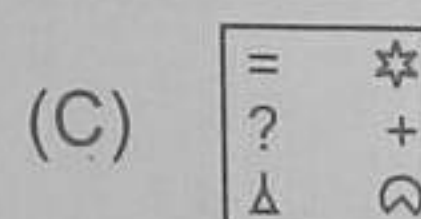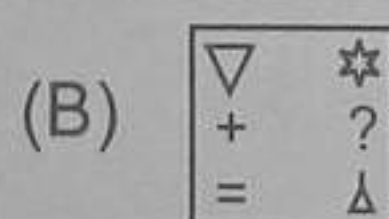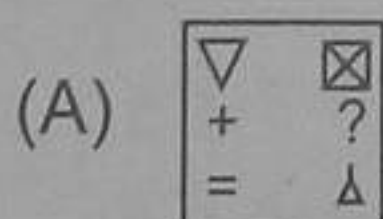(A) 5   (B) 11   (C) 13   (D) 8

17. Five plays A, B, C, D and E are to be staged from Monday to Friday of a week. On each day, only one play will be staged. D or E should not be either the first or last to be staged. E should be immediately followed by C. B should be staged immediately after D. One play is staged between A and B. Which is the first play to be staged?

(A) A   (B) B   (C) C   (D) None of these

18. Which a figure amongst the following options best replace the sign of interrogation (?), so that series in Problem figures is continued?

Problem Figures

(A)   (B)   (C)   (D)

19. The sheet of paper shown in the figure (X), is folded to form a box. Which amongst the following options includes the boxes that are similar to the box that will be formed.

Fig. (X)

(i)

(ii)

(iii)

(iv)

(A) (i) and (ii) only

(B) (i) and (iii) only

(C) (iii) and (iv) only

(D) (i), (ii), (iii) and (iv)

20. Pointing to a man in a photograph, a woman said, "His brother's father is the only son of my grandfather." How is the woman related to the man in the photograph?

(A) Mother   (B) Aunt   (C) Sister   (D) Daughter

COMPUTERS AND INFORMATION TECHNOLOGY

21. The company that launched first commercially available phone to run on Android OS was _____ .

(A) Samsung   (B) Nokia   (C) Micromax   (D) HTC

22. 'Repeat' command in MS-Word 2007 is invoked by _____ key.

(A) F4   (B) F5   (C) F7   (D) F6

23. Mitsubishi DiamondTouch, Microsoft PixelSense, Elan efinger are some of the first devices to support _____ technology .

(A) Multi-touch   (B) Single-touch   (C) Double-touch   (D) None of these

24. An assembler which runs on one machine but produces the machine code for another machine is called _____ .

(A) Compiler

(B) Emulator

(C) Cross assembler

(D) Simulator

25. Which of the following is a valid floating constant in C++ ?

(A) +17/2   (B) 0.17E2.3   (C) 152.0E08   (D) .25E-7

26. Find the odd one out.

(A) EDVAC   (B) EDSAC   (C) PDP - 11   (D) UNIVAC - I

27. What is the value printed by the given C++ program?

```
#include<iostream.h>
int main()
{
    int x=0;
    int y=0;.
    if (x++ && y++)
    {
        y+= 2;
    }
    cout << x + y;
    return 0;
}
```

(A) 1
(B) 2
(C) 4
(D) 5

28. The Integrated Circuit (IC) was invented by _____ .

(A) M.V. Wilkes
(B) Jack Kilby
(C) Howard H.Aiken
(D) Thomas Watson

29. A Trojan gives a hacker remote access to a targeted computer system. Which of the following operations is performed by a hacker on a target computer system?

1. Data theft
2. Keystroke logging
3. Downloading or uploading of files
4. Crashing the computer
5. Electronic money theft

(A) Only 1 and 2
(B) Only 2, 3 and 4
(C) Only 3, 4 and 5
(D) All 1, 2, 3, 4 and 5

30. The range from 0 to 31 in ASCII code is known as _____ .

(A) Control Characters
(B) Text Characters
(C) Symbol Characters
(D) Number Characters

31. Which of the following is NOT a valid C++ variable name?

(A) 1_IdentifierPointer
(B) _1IdentifierPointer
(C) _IdentifierPointer1
(D) identifier1_pointer

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

```
<body>
This text is <strong> strongly emphasized </strong>
</body>
```

(A) This text is **strongly emphasized**
(B) this text is **strongly emphasized**
(C) this text is strongly emphasized
(D) This text is **strongly** emphasized
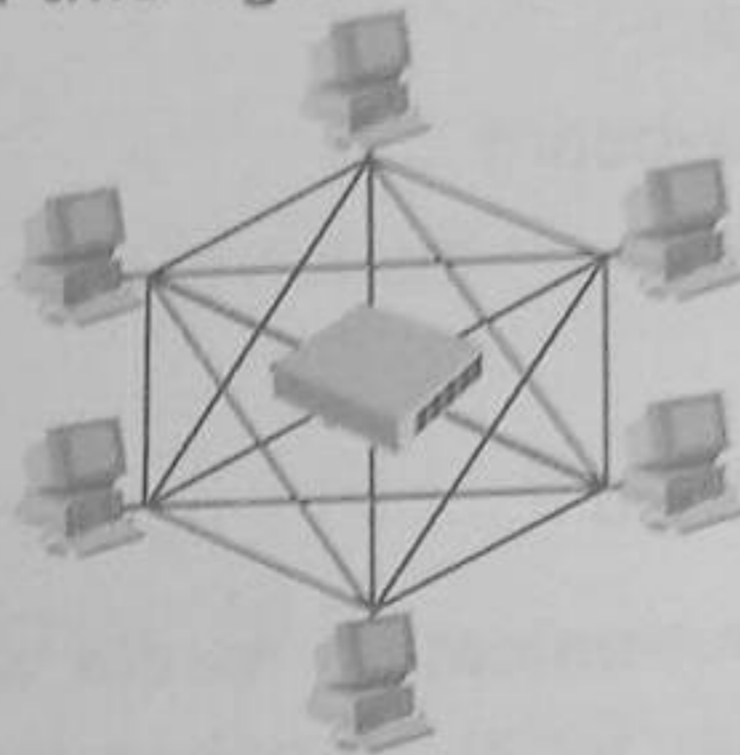
33. Which generation of computer's key-features are described below?
    - Use of Magnetic tapes and disks
    - Core memory developed
    - First Operating systems developed
    - Programming in machine as well as assembly language

    (A) First Generation Computers
    (B) Second Generation Computers
    (C) Third Generation Computers
    (D) Fourth Generation Computers

34. A character set in C++ is _____ .
    (A) Only Symbols on the keyboard
    (B) Only Text on the keyboard
    (C) Only Numbers on the keyboard
    (D) Text, numbers and symbols on the keyboard

35. $(72605)_8 = ($_____$)_{16}$
    (A) 30085
    (B) 38500
    (C) 7585
    (D) 8755

36. Which of the following communication media will you suggest to be procured by a school for connecting all its local branches in Delhi for a very effective and high speed communication?
    (A) Telephone Cables
    (B) Ethernet Cables
    (C) Coaxial Cables
    (D) Fiber Optic Cables

37. Which of the following is NOT an advantage of networking?
    (A) Share resources like printers, scanners and software
    (B) Dependence on a central server for all work
    (C) Share storage
    (D) Improve communications and messaging

38. Computers that are attached to a network, seeking to share resources of the network are generally called workstations or _____ .
    (A) Servers
    (B) Transmitters
    (C) Routers
    (D) Nodes

39. In an Operating System, the number of processes completed per unit time is known as _____
    (A) Output
    (B) Throughput
    (C) Efficiency
    (D) Capacity

40. Dead Line Scheduling is _____ .
    (A) Preemptive Scheduling
    (B) Non-Preemptive Scheduling
    (C) Deadlock Scheduling
    (D) None of these

41. In C++, which of the following is the correct operator to compare two variables?
    (A) :=
    (B) =
    (C) ==
    (D) ::

42. In C++, which of the following is a pre-processor directive?

(A) school myschool;
(B) #include <iostream.h>
(C) extern int myschoolid;
(D) myschool.name = "Wonderful School";

43. Use the following information to answer the question.
- It is an online social networking website.
- It is based in San Francisco, US.
- Its founders are Jack Dorsey, Noah Glass, Evan Williams and Biz Stone.

Identify the website.

(A) Facebook
(B) LinkedIn
(C) Twitter
(D) Orkut

44. The network topology shown in this figure is called _____.

(A) Star topology
(B) Mesh topology
(C) Ring topology
(D) Graph topology

45. Which operator has lowest precedence in C++ ?

(A) Comma(,)
(B) Post increment (++)
(C) Equality (==)
(D) Logical OR (||)

46. Which of the following C++ reserved word is NOT an access specifier?
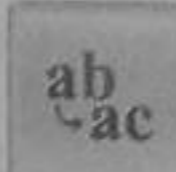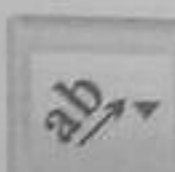
(A) public
(B) private
(C) protected
(D) virtual

47. Which 'paragraph indentation' of MS-Word 2007 has set in the following Text ?

SOF is a Registered Not-For-Profit Organization Popularising Computer, Science, Mathematics and English
Education among school children.A non-profit organization established by leading academicians,
scientists and media personalities with the aim of promoting science, mathematics and computer education,
the Science Olympiad Foundation has been striving for over a decade to promote scientific attitude through
innovative activities and use of IT in learning process that involve school students across the country.

(A) Left Indentation
(B) Right Indentation
(C) First line Indentation
(D) Hanging Indentation

48. This icon of MS-Excel 2007 rotates text to a diagonal angle or vertical orientation.

(A) A▴
(B) ab çac
(C) ✎⟋▾
(D) ☰↵

49. Which of the following is NOT a font face in MS-Word 2007 ?

(A) Cambria
(B) Book Antiqua
(C) Candara
(D) Bodona

50. In HTML, the default alignment of an image that is inserted in the webpage is
_____.

(A) Top

(B) Left

(C) Right

(D) Bottom