# International Foundation Mathematics Olympiad(IFMO)
CLASS 9
WORKSHEET – 4

SECTION-A (Logical Reasoning)

1. In the following question, a set of three figures X,Y,Z have been given, showing a sequence in which a paper is folded and finally cut from a particular section. Below these figures a set of answer figures marked (a, b, c, d) showing the design which the paper actually acquires when it is unfolded are given. You have to select the answer figure which most closely resembles the unfolded piece of paper.
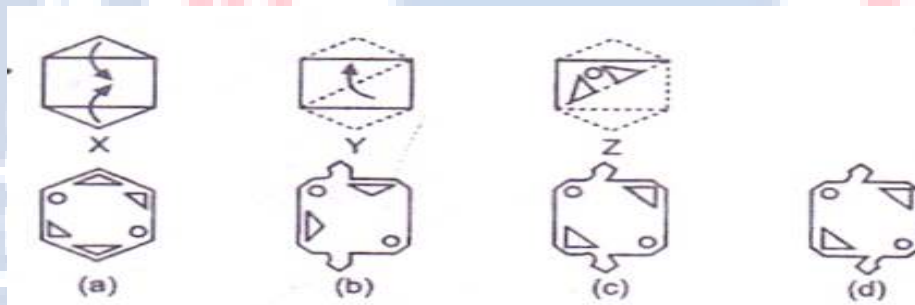

2. Unscramble the letters of the words given and find odd one

    a) EAPPL

    b)EANOGR

    c)ABAANN

    d) HARCI

3. In the given figure, find the alphabet opposite to A.

    a) C   c) E
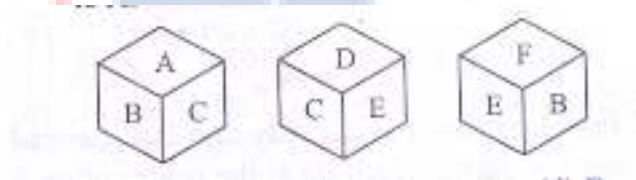
    b) D   d) F

4. This type of problem on series consists of five figures numbered A,B,C, D and E forming the set of problem figures, followed by five other figures numbered 1,2,3,4 and 5 forming the set of Answer figures. The five consecutive problem figures form a definite sequence and it is required to select one of the figures

from the set of Answer figures which will continue the same sequence.

PROBLEM FIGURES   ANSWER FIGURES

5.

24 40 56   78 65 91   96 112 144

8   13   ?

   a) 12   c) 16
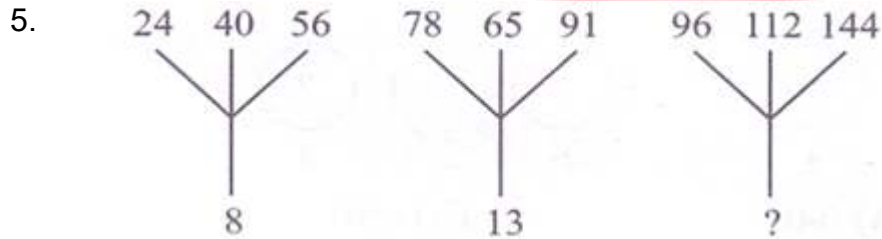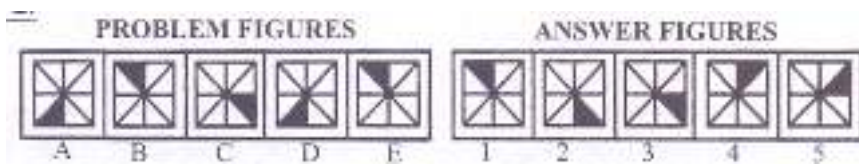
   b) 14   d) 18

6.   If A stands for +, B stands for -, C stand for x than what is the value of (10C4) A (4C4) B6?

   a) 50   c) 66

   b) 56   d) 60

7.   Choose one word which cannot be formed from the letters of the word CONSULTATION?

   a) SALUTE   c) NATION

   b) STATION   d) CONSTANT

8.   If orange is called butter, butter is called soap, soap is called ink, ink is called honey, honey is called orange, then which of the following is used for washing clothes?

   a) Soap   c) Orange

   b) Ink   d) Butter

9.   There is a certain relation between two given words on one side of : : and one word is given on another side of : : while another word is to be found from the given alternatives having the same relations with this word as the given pair has. Select the best alternative.

Election : Manifesto : : Meeting :?

   a) Report   c) Agenda

   b) Preface   d) Circular

10. There is a series of numbers which follow some definite order. Find the missing term and complete the series.

1, 5, 7, 14, 18, 20, 40, 44, 46, ?

   a) 50   c) 52
   b) 48   d) 92

SECTION-B (Day to Day Mathematics)

11. The value of $9a^2 + 4b^2 + 16c^2 + 12ab -24ac - 16bc$ for $b = 1$, $c = - 2$ will be

   a) 0   c) 256
   b) 64   d) 32

12. The value of x, which is added to the expression $x^4 + 2x^3 -2x^2 + x - 1$ to make it completely (exactly) divisible by $x^2 + 2x - 3$ is

   a) $x + 2$ c) $x - 4$
   b) $x - 2$ d) $x + 3$

13. A point on line $y = 3x + 2$ has equal ordinate and abscissa, then the point will lie in

   a) I quadrant   c) III quadrant
   b) II quadrant   d) IV quadrant

14. A circle has its centre (3,5) has its point of tangency (3,0).The area of circle will be (in sq. units)

   a) 25π c) 16π
   b) 9π d) 4π

15. If the point (4, 5) lies on the graph $3y = ax + 3$, then a =

   a) 2   c) -3
   b) 3   d) 4

16. The measure of an angle if the five times its complement is 12^0 less than twice its supplement.

   a) 32^0 c) 34^0
   b) 36^0 d) 42^0

17. AB $\parallel CD \parallel EF$ and $GH \parallel KL$. The measure of $\angle HKL$ is

a) 85^0 c) 215^0

b) 135^0 d) 145^0
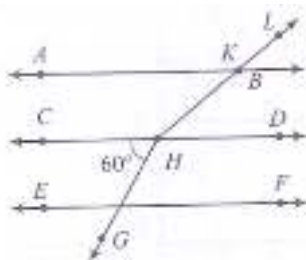
18. The sum of all the exterior angles of a triangle is

    a) 180^0 c) 540^0

    b) 360^0 d) 270^0

19. In which of the following figures are the diagonals equal?

    a) Rectangle   c) Rhombus

    b) Parallelogram   d) Trapezium

20. ABCD is a parallelogram in which $\angle D = 120^0$ if the bisectors of $\angle A$ and $\angle B$ meet at P, then

    a) DC = AD   c) BC = AP

    b) DC = 2AD   d) PB = AB

21. If P, Q, R and S are midpoints of AB, BC, CD and DA of parallelogram ABCD and ar(ABCD) = 26m², then ar(PQRS) =

    a) 13m²   c) 6.75 m²

    b) 6.5 m²   d) 19.5 m²

22. If a square and equilateral triangle have same perimeter and, square has area A1 and equilateral triangle has A2, then.

    a) $A_1 = A_2$ c) $A_2 > A_1$

    b) $A_1 > A_2$ d) $A_2 = \frac{2}{3}A_1$

23. What is the length of longest rod that can placed in a room of dimension 10 m x 10 m x 5 m?

    a) 16 m   c) 12 m

    b) 15 m   d) $10\sqrt{5}\ m$

24. Ogives are the graphical representation of

    a) Cumulative frequency   c) Raw data

    b) Frequency   d) Relative frequency

25. A box contains 200 bulbs out of which 20 are defective. A bulb is drawn at random. What is the probability of drawing a non-defective bulb?

    a) $\frac{1}{10}$ c) $\frac{7}{10}$

    b) $\frac{9}{10}$ d) $\frac{4}{5}$

ANSWER IFMO CLASS 9 – WORKSHEET - 4																			
1	D	2	D	3	C	4	E	5	C	6	A	7	A	8	B	9	C	10	D
11	C	12	B	13	C	14	A	15	B	16	C	17	D	18	B	19	A	20	B
21	A	22	B	23	B	24	A	25	B										