NARAYANA GROUP OF SCHOOLS - INDIA

40+ YEARS OF EXCELLENCE

ISMO MODEL PAPER

Class : _____

Name: _____

QUESTIONS	40	TIME	60 minutes

INSTRUCTIONS

Read all instructions carefully before attempting any question.

- The question paper consists of 40 Multiple choice questions numbered from 1 to 40.
- Each question is followed by four alternatives 1, 2, 3 and 4.
- For each question there is only one correct option.
- There is NO negative marking.
- The maximum duration of exam is 60 minutes.

Section No	Name of the Section	Number of questions	Points per question	Total points of section
I	Mental Ability	10	1	10
II	Mathematics	20	1	20
III	HOTS	10	2	20
	Total	40 questions		50 marks

MENTAL ABILITY (1 TO 10)

1. If GO=32, SHE=49, then SOME will be equal to

1) 56 2) 58 3)62 4) 64

2. If DRIVER=12, PEDESTRIAN=20, ACCIDENT=16, then CAR=?

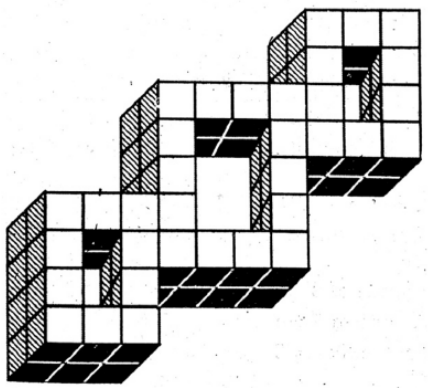
1) 3 2) 6 3) 8 4) 10

3. If DELHI is coded as 73541 and CALCUTTA as 82589662, how can CALICUT be coded?

1)5279431 2) 5978213 3)8251896 4)8543691

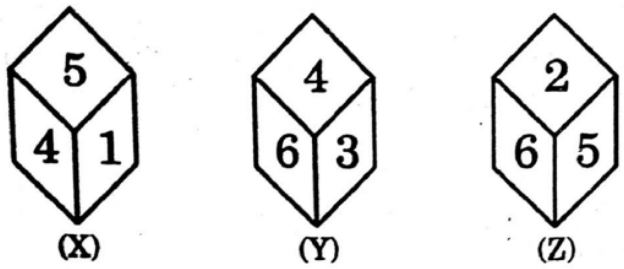
Directions (Q.No-4): Count the number of cubes the following figure :

4.



1) 64 2) 66 3) 68 4) 70

Directions (Q.No-5-8): Three different positions X,Y and Z of a dice are shown in the figures given below. Answer the following questions which are based upon these figures.



5. Which number lies at the bottom face in position X?

1) 2 2) 3 3) 6 4) Cannot be determined

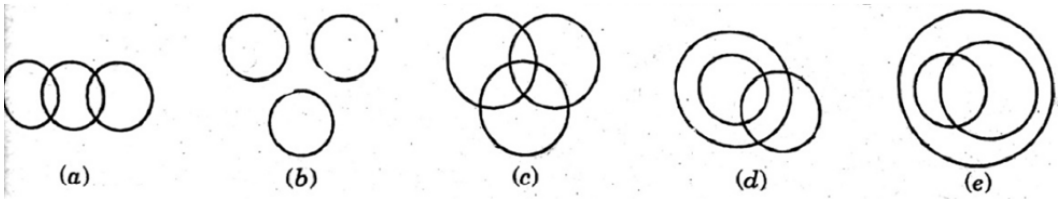
6. Which number lies at the bottom face in position Y?

1) 1 2) 2 3) 5 4) Cannot be determined

7. Which number lies opposite 6?

1) 1 2) 2 3) 4 4) 5

Directions (Q.No-8 to 11): Each of the following questions below contains three elements. These three elements may or not have some linkage. Each group of the elements may fit into one of the diagrams at (a), (b), (c), (d) and (e). You have to indicate groups of elements in each questions fit into which of the diagram given below. The letter indicating the diagram is the answer.



8. Tennis fans, Cricket players, Students

1) e 2) b 3) c 4) d

9. Males, Fathers, Doctors

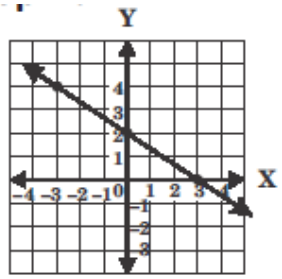
1) a 2) e 3) c 4) d

10. Anti-social elements, Pick pocketers, Blackmailers

1) a 2) e 3) c 4) d

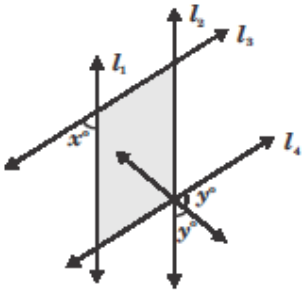
MATHEMATICS (11 TO 30)

11. Which equation represents the given graph?



1) $2X+Y=6$ 2) $Y+2X+4$ 3) $2(X-1)+3Y=4$ 4) $2X-3Y=6$

12. In the given figure, if $l_1 \| l_2$ and $l_3 \| l_4$, what is 'y' in terms of 'x'?



1) 90^0+X 2) 90^0+2X 3) $90^0-\frac{x}{2}$ 4) 90^0-2X

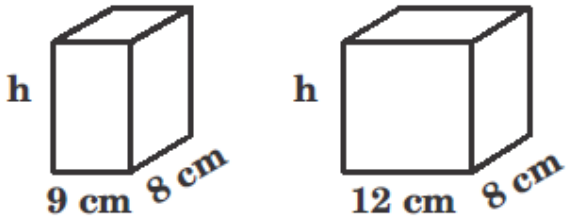
13. Find 'x' if $8^{x-2}\times\left(\frac{1}{2}\right)^{4-3x}=(0.0625)^X$.

1)0 2)4 3)2 4)1

14. A bag contains 3 red balls, 5 black balls and 4 white balls. A ball is drawn at random from the bag. What is the probability of not getting a black ball?

1) $\frac{1}{4}$ 2) $\frac{5}{12}$ 3) $\frac{1}{3}$ 4) $\frac{7}{12}$

15. Two rectangular boxes have the same height and length, but different widths as shown in the figure. The difference in the volumes of the boxes is $360cm^3$. What is the height of the boxes?



1)18cm 2)15cm 3)16cm 4)14cm

16. $p(x)$ is a polynomial satisfying $p\left(x+\frac{3}{2}\right)=p(x)$, for all real values of 'x'. If $p(5)=2010$, what is the value of $p(8)$?

1)2010 2) $2009\frac{1}{2}$ 3) $\frac{2009}{2}$ 4) $2010\frac{1}{2}$

17. The base of a conical tent is of area 616 sq. cm. A 48cm long vertical pole is placed at its centre so that it touches the roof of the tent. How much canvas is needed to make the tent if the base is also covered with canvas?

1) $2816cm^2$ 2) $2861cm^2$ 3) $2618cm^2$ 4) $2681cm^2$

18. The probability if not getting 1 or 6 in a single toss of a die is

1) $\frac{1}{2}$ 2) $\frac{1}{3}$ 3) $\frac{1}{6}$ 4) $\frac{4}{6}$

19. If $\frac{x}{3}=x^2$, the value of x can be which of the following?

$(i)-\frac{1}{3}$ $(ii)0$ $(iii)\frac{1}{3}$

1)Only (i) 2)Only (ii)

3)Only (iii) 4)Only (ii) and (iii)

20. Lokesh planned to drive a distance of 'x' km. After driving 120km, Lokesh stopped for petrol. What fractional part of the trip had Lokesh covered when he stopped?

1) $\frac{x}{120}$ 2) $\frac{x}{(x+120)}$ 3) $\frac{1}{(x+120)}$ 4) $\frac{120}{x}$

21. In a single throw with two dice, what is the probability of throwing a 11?

1) $\frac{2}{9}$ 2) $\frac{1}{36}$ 3) $\frac{1}{9}$ 4) $\frac{1}{18}$

22. Which of the following is the nearest point from origin?

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

23. ABCD is a parallelogram of area S. E and F are the middle points of the sides AD and BC respectively. If G is any point on the line EF, what is the area of ΔAGB?

1) $\frac{S}{2}$ 2) $\frac{S}{3}$ 3) $\frac{S}{4}$ 4) $\frac{3S}{4}$

24. ABCD is a trapezium whose area is a^2-b^2. If AB=a, DC=b and $\overline{AB} \| \overline{CD}$, what is the distance between the parallel sides?

1)(a-b) 2)(a +b) 3)2(a-b) 4)2(a +b)

25. Find the value of $X - Y^{X-Y}$ **when X=2 and Y=-2.**

1)18 2)-18 3)14 4)-14

26. In the given figure, $PQ \| RS$ **and** $EF \| QS$. **If** $\angle Q = 60^0$, **find the measure of** $\angle RFE$.

1) 115^0 2) 120^0 3) 60^0 4) 180^0

27. When is the quadrilateral formed by joining the midpoints of the sides of a quadrilateral PQRS, taken in order, a rectangle?

1)PQRS is a rectangle.

2)PQRS is a parallelogram

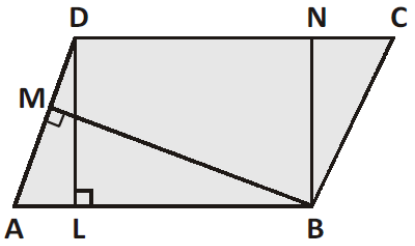
3) Diagonals of PQRS are perpendicular.

4) Diagonals of PQRS are equal.

28. If $x^{x\sqrt{x}} = \left(x\sqrt{x}\right)^x$, find the value of X.

1) $\frac{3}{2}$ 2) $\frac{2}{9}$ 3) $\frac{9}{4}$ 4) $\frac{4}{9}$

29. In the given figure, what is the area of parallelogram ABCD?



1) $AB \times BM$ 2) $BC \times BN$ 3) $DC \times DL$ 4) $AD \times DL$

30. 'O' is the centre of a circle, $\angle BOA = 90^0$ and $\angle COA = 110^0$. Find the measure of $\angle BAC$.

1) 70^0 2) 80^0 3) 120^0 4) 50^0

HOTS (31 TO 40)

31. Area of a given triangle is x_1 square units. If the sides of this triangle are doubled, the area of the new triangle becomes x_2 square units. Calculate the percentage increase in the area.

1) $\mathbf{100\sqrt{2}\%}$ 2) $\mathbf{200\%}$ 3) $\mathbf{300\%}$ 4) $\mathbf{400\%}$

32. If (x-1) is a factor of polynomial f(x) but not of g(x), it must be a factor of which of the following polynomials?

1) f(x) g(x) 2) -f(x) + g(x) 3) f(x) – g(x) 4) {f(x) + g(x)} g(x)

33. Two planes start from a city and fly in opposite directions, one averaging a speed of 40 km/hour greater than the second. If they are 3400 km apart from 5 hours, find the sum of their average speeds.

1) 680 km/h 2) 360 km/h 3) 320 km/h 4) 640 km/h

34. Three consecutive numbers such that twice the first, 3 times the second and 4 times the third together make 191. Find the least of the consecutive numbers.

1) 18 2) 21 3) 19 4) 20

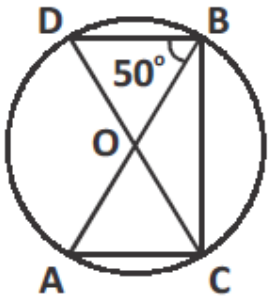
35. If $\Delta ABC \cong \Delta PQR$, which of the following is true?

1)AB=RP 2)CA=RP 3)AC=RQ 4)CB=QP

36. If $x + \frac{1}{x} = a + b$ and $x - \frac{1}{x} = a - b$, which of the following is true?

1)ab = 1 2)a = b 3)ab = 2 4)a + b = 0

37. In the given figure AB and CD are diameters of a circle with centre O. If $\angle OBD = 50^0$, find the $\angle AOC$.

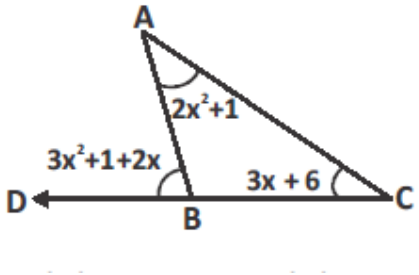


1) 50^0 2) 80^0 3) 30^0 4) 45^0

38. Identify one of the factors of $x^2 + \frac{1}{x^2} + 2 = -2x - \frac{2}{x}$.

1) $x - \frac{1}{x}$ 2) $x + \frac{1}{x} - 1$ 3) $x + \frac{1}{x}$ 4) $x^2 + \frac{1}{x^2}$

39. Find the value of $\angle ABC$.



1) 146^0 2) 126^0 3) 106^0 4) 34^0

40. If the angles of a triangle are in the ratio 5:3:7, what is such a triangle called?

1)An acute angled triangle 2)An obtuse angled triangle

3)A right angled triangle 4) An isosceles triangle

*****ALL THE BEST*****