Maximum Marks: 40

Time allowed: One and a half hours

Answers to this Paper must be written on the paper provided separately.

You will not be allowed to write during the first 10 minutes.

This time is to be spent in reading the question paper.

The time given at the head of this Paper is the time allowed for writing the answers.

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*Attempt **all** questions from **Section A** and **any three** questions from **Section B**.*

The intended marks for questions or parts of questions are given in brackets [ ].

SECTION A

*(Attempt **all** questions from this Section.)*

Question 1

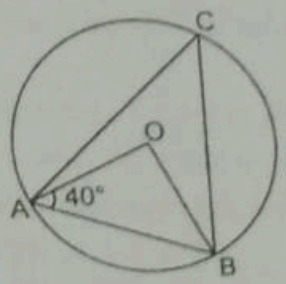
Choose the correct answers to the questions from the given options.
(Do not copy the questions ,Write the correct answers only.)

(i) The point (0,3)is invariant under the reflection in:

a) The origin
b) x-axis
c) y-axis
d) Both x-axis & y-axis

(ii) In the given figure ,O is the center of the circle
If $\angle OAB = 40^\circ$ then $\angle ACB$ *is equal to*:

a) 50°
b) 40°
c) 60°
d) 70°



(iii) A conical Military tent is 5m high and diameter of the base is 24m,slant height is 13m then the cost of canvas used for making this tent at the rate of ₹14per m^2 is:$[\pi = \frac{22}{7}]$

a) ₹6864
b) ₹8646
c) ₹4686
d) ₹6468

(iv) $\left(\frac{1+\tan\theta}{1+\cot\theta}\right)^2 =$

a) 1
b) $\tan^2\theta$
c) $\tan\theta$
d) 4

(v) The median class for the give distribution is :

Class	85-100	100-115	115-130	130-145
Cumulative frequency	11	20	28	36

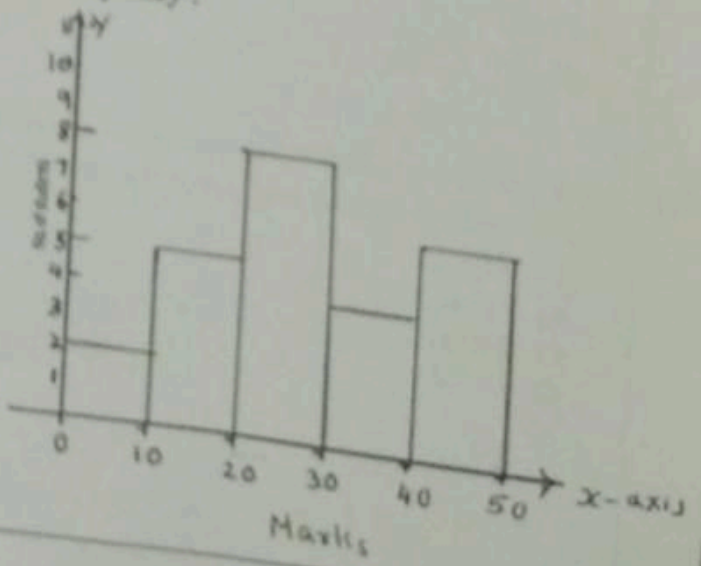
a) 85-100
b) 100-115
c) 115-130
d) 130-145

(vi) The mid-point of the line segment joining the points A(-1,4) and B(-3,-2) is :
a) (-2,-3)
b) (1,3)
c) (-2,1)
d) (2,1)

(vii) The slope of a line parallel to the line $3x + 2y - 7 = 0$ is:
a) $-\frac{2}{3}$ b) $\frac{2}{3}$ c) $-\frac{3}{2}$ d) $\frac{3}{2}$

(viii) If the curved surface area of a cylinder is 1760 cm^2 and its base radius is 14cm. Then its height is: $\pi = \frac{22}{7}$
a) 10cm b) 20cm c) 5cm d) 40cm

(ix) In the given Graph ,the modal class is the class with frequency :
a) 8
b) 5
c) 2
d) 6



(x) In a badminton match the probability of Radha winning the match is 0.58.the probability of her losing the match is :

a) 0.42 b)1 c) 0.58 d) 0

SECTION B

*(Attempt **any three** questions from this Section.)*

Question 2

(i) Find the ratio in which the y-axis divides internally the line joining points A(2,-4) and B(-3,6). [2

(ii) A box contains 150 bulbs out of which 15 are defective. It is not possible to just look at a bulb and tell whether or not it is defective. One bulb is taken out at random from this box. Calculate the probability that the bulb taken out is: [2

(i) a good one

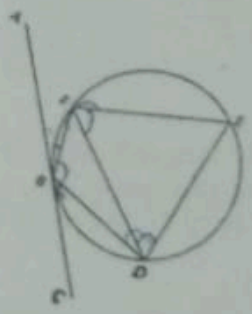
(ii) a defective one

(iii) In the given figure ,AC is a tangent to circle at point B . ΔEFD is an equilateral triangle and $\angle CBD = 40^\circ$ Find: [3

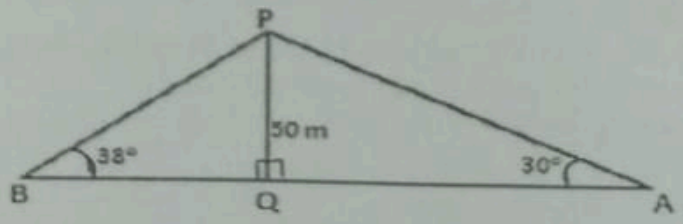
a) $\angle BFD$

b) $\angle FBD$

c) $\angle ABF$

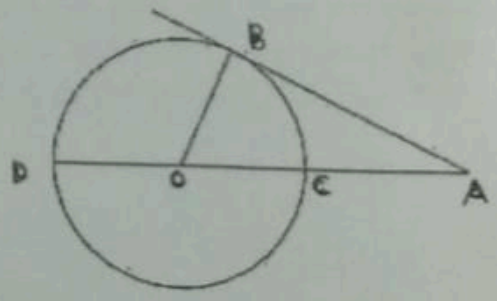


(iv) Two persons are standing on the opposite sides of a tower. They observe the angles of elevation of the top of the tower to be 30° and 38° respectively. Find the distance between them, if the height of the tower is 50 m [3]



Question 3

(i) In the given figure, O is the centre of the circle and AB is a tangent to the circle at B. If AB = 15 cm and AC = 7.5 cm, calculate the radius of the circle. [2]



(ii) A solid cone of height 8 cm and base radius 6 cm is melted and re-casted into identical cones, each of height 2 cm and diameter 1 cm. Find the number of cones formed. [2]

(iii) Prove that: [3]

$$\frac{\cos^2 A}{\cos A - \sin A} + \frac{\sin A}{1 - \cot A} = \sin A + \cos A$$

(iv) Use graph for this question [3]

The following table show the distribution of marks in a 50 Marks test in Science:

Marks	0-10	10-20	20-30	30-40	40-50
No of Students	5	7	10	8	5

Draw the Ogive for the above distribution and hence estimate the median marks.

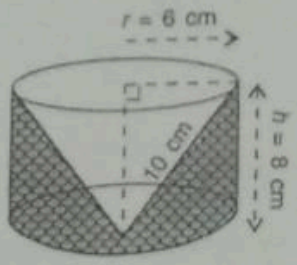
Question 4

(i) Find the equation of the line whose x-intercept is 8 and y-intercept is –12 [2]

(ii) Find the mean for the following distribution: [2]

Class Interval	0-10	10-20	20-30	30-40
No of Students	6	5	16	3

(iii) From a solid cylinder, whose height is 8cm,and radius is 6cm , a conical cavity of height 8cm and a base radius 6cm is hollowed out. Find the volume of the remaining solid [3]

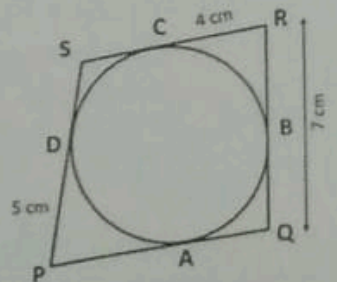


(iv) Use graph paper for this question: [3]

a) The point A(2,-4) is reflected about the x-axis to get the image B.Find the coordinates of B
b) Point B is reflected about y-axis to get the image C
c) Name the figure ABC

Question 5

(i) In the given figure, the sides of the quadrilateral PQRS touches the circle at A,B,C and D. If RC=4cm ,RQ=7cm and PD=5cm .Find the length of PQ: [2]



[2]

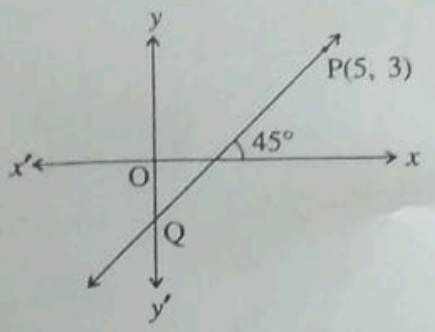
(ii) Prove that $\sqrt{\frac{1-sinA}{1+sinA}} = secA - tanA$ [2]

(iii) The line through (5,3) intersect y-axis at Q. [3]

a) Write the slope of the line

b) Write the equation of the line

c) Find the coordinate of Q



(iv) Use graph paper for this question .Estimate the mode of the given distribution by plotting a histogram: [3]

The daily profit in ₹ of 100 shops In a departmental store are distributed as follows :

Profit per shop in ₹	100-200	200-300	300-400	400-500	500-600
No. of Shops	18	27	20	17	18

Question 6

(i) A dice is thrown twice .Find the probability of getting a bigger value on the first throw. [2]

(ii) Point M (2,b) is the mid-point of the line segment joining A(a,7) and B(6,5).Find the value of a, b [2]

(iii) A vertical pole and a vertical tower are on the same level ground .From the top of the pole the angle of elevation of the top of the tower is 60° and the angle of depression of the foot of the tower is 30°. Find the height of the tower if the height of the pole is 20m . [3]

(iv) Given that the mean of the following frequency distribution is 54,find the missing frequency '**f**' [3]

Class interval	0-20	20-40	40-60	60-80	80-100
Frequency	7	f	10	9	13

ALL THE BEST