

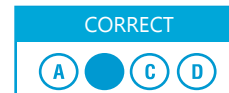
ISFO Maths Sample Paper

MAXIMUM TIME: 60 MINUTES

MAXIMUM MARKS: 100

INSTRUCTIONS

1. Please DO NOT OPEN the contest booklet until you are asked to do so.
2. The question paper comprises of 4 sections (Total 50 questions):
 - Section A: Mathematical Reasoning** 25-Questions (2 marks each)
 - Section B: Everyday Maths** 15-Questions (1 mark each)
 - Section C: Logical Reasoning** 5-Questions (2 marks each)
 - Section D: BrainBox** 5-Questions (5 marks each)
3. All questions are compulsory. There is no negative marking.
4. No electronic devices capable of storing and displaying visual information such as calculator and mobile are allowed during the course of the exam.
5. Fill all your detail properly on the OMR sheet.
6. There is only ONE correct answer of each question.
7. To mark your choice of answers by darkening the circles on the OMR Sheet, use an HB Pencil or a Blue/Black Ball Point Pen only.
8. Shade your answer clearly as per the given example:



DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO

Roll No.:

Student's Name:

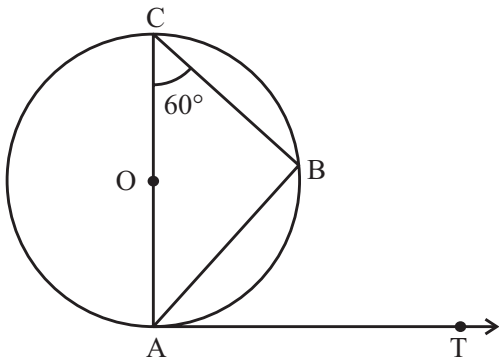
SECTION A : MATHEMATICAL REASONING

1. Simplify:

$$\frac{\sin A}{\sec A + \tan A - 1} + \frac{\cos A}{\operatorname{cosec} A + \cot A - 1}$$

- a) $2\sec A$ b) 1
c) 0 d) $2 \operatorname{cosec} A$

2. In the given figure AB is a chord of the circle, AOC is its diameter and $\angle ACB = 60^\circ$. If AT is the tangent to the circle at the point A, then $\angle BAT$ is equal to _____.

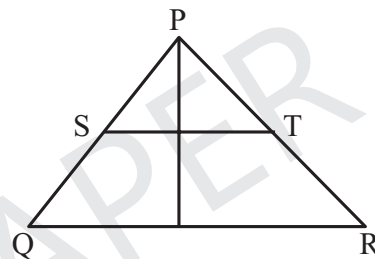


- a) 40° b) 35°
c) 45° d) 50°

3. If one of the zeros of the cubic polynomial $x^3 + ax^2 + bx + c$ is -1 , then the product of the other two zeros is _____.

- a) $b - a - 1$ b) $b + a + 1$
c) $b - a + 1$ d) $b + a - 1$

4. In two similar triangles PQR and PST, $PS = x$ cm, $SQ = (3x + 4)$, $PT = (x + 3)$ and $TR = (3x + 19)$ cm. Which of the following is the value of x ?



- a) 2 b) 5
c) -4 d) -5

SECTION B : EVERYDAY MATHS

5. Floor of a room is to be fitted with square marble tiles of the largest possible size. The size of the room is $15 \text{ cm} \times 9 \text{ cm}$. How many such square marble tiles are required?

- a) 135 b) 15
c) 45 d) 25

6. Two years ago a man's age was three times the square of his son's age. In three years' time, his age will be four times his son's age. Find the present age of the son.

- a) 8 years b) 6 years
c) 5 years d) 4 years

SECTION C : LOGICAL REASONING

7. A, B, C, D, E, F and G are members of a family consisting of four adults and three children, two of whom, F and G are girls. A and D are brothers and A is a doctor. E is an Engineer married to one of the brothers and has two

children. B is married to D and G is their child. Who is C?

- a) A's son b) G's brother
c) E's daughter d) F's father

8. In a que Rahul is fourth from the front. Seema is ninth from the last, If Varun is ninth after Rahul and just in the middle of Seema and Rahul, How many persons are there in the que?

a) 34

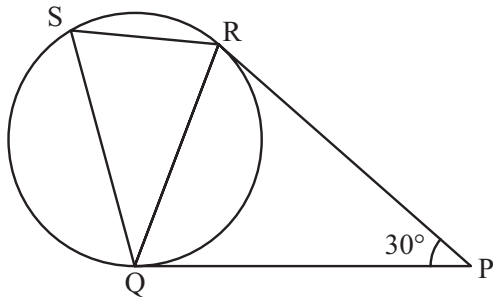
b) 30

c) 32

d) 31

SECTION D : BRAINBOX

9. In the given figure, (not drawn to scale) tangents PQ and PR are drawn to a circle such that $\angle RPQ = 30^\circ$. A cord RS is drawn parallel to the tangent PQ. Find the $\angle RQS$.



a) 15°

b) 25°

c) 20°

d) 30°

10. Find the mean, median and mode of the following data respectively

Class	Frequency
0-10	4
10-20	5
20-30	7
30-40	10
40-50	12
50-60	8
60-70	4

a) 37.2, 38.5, 40.4

b) 38.5, 39, 40.4

c) 37.2, 39, 43.33

d) 38.5, 36.42, 43.33



ANSWERS

1. (B)

2. (D)

3. (C)

4. (A)

5. (B)

6. (C)

7. (A)

8. (D)

9. (D)

10. (C)