

RISE OF NATION ACADEMY

Mathematics (SET-B)

Class 10

Min. Marks:- 20

MOCK TEST

Time: - 2 Hr.

Max. Marks:- 40

General Instructions :

1. The question paper consists of 14 questions divided into 3 sections A, B, C.
2. Section A comprises of 6 questions of 2 marks each. Internal choice has been provided in two questions.
3. Section B comprises of 4 questions of 3 marks each. Internal choice has been provided in one question.
4. Section C comprises of 4 questions of 4 marks each. An internal choice has been provided in one question. It contains two case study based questions.

SECTION - A

1. If the sum of two natural numbers is 8 and their product is 15, then find the numbers.
2. Find the mean of the following data :

Class interval	0-10	10-20	20-30	30-40	40-50
Frequency	2	1	6	8	3

3. Find the 25th term of the A.P. $-5, \frac{-5}{2}, 0, \frac{5}{2}, \dots$

OR

How many terms of the A.P. 27, 24, 21, ... should be taken so that their sum is zero?

4. A tangent PQ at a point P of a circle of radius 5 cm meets a line through the centre O at a point Q so that OQ = 13 cm. Find the length PQ.
5. Find the value of k so that the quadratic equation $kx(3x - 10) + 25 = 0$, has two equal roots.
6. Find the volume of the largest sphere that can be cut from a cylindrical log of wood of base radius 1 cm and height 5 cm.

OR

Three cubes each of edge 3 cm are joined end to end. Find the surface area of the resulting cuboid.

7. Let ABC be a right angled triangle in which $AB = 12$ cm, $BC = 5$ cm and $\angle B = 90^\circ$. BD is the perpendicular from B on AC. The circle through B, C and D is drawn. Construct the tangents from A to this circle.
8. From the top of a 10 m high tower, the angle of depression of a point on the ground is found to be 30° . Find the distance of the point from the base of the tower.

RISE OF NATION ACADEMY
Mathematics (SET-B)
Class 10

Min. Marks:- 20

MOCK TEST

Time: - 2 Hr.

Max. Marks:- 40

9. Look at the frequency distribution table given below.

Class interval	35-45	45-55	55-65	65-75
Frequency	8	12	20	10

Find the median of the above distribution.

SECTION -B

10. Calculate the mode for the following frequency distribution.

Class interval	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36	37-40
Frequency	2	5	8	9	12	14	14	15	11	10

11. Two concentric circles are of radii 5 cm and 3 cm. Find the length of the chord of the larger circle, which touches the smaller circle.

OR

In the given figure, AB and AC are tangents to a circle with centre O and radius 8 cm. If $OA = 17$ cm, then find the length of AC .

12. If the sum of first m terms of an A.P. is the same as the sum of its first n terms, show that the sum of its first $(m + n)$ terms is zero.
13. Ritu packed a football as a gift for her brother's birthday in a cuboidal box whose diameter is same as that of length of base of the box having length, breadth and height respectively 23 cm, 23 cm and 28 cm.



Based on the above information, answer the following questions.

- (i) What is the volume of the football?
- (ii) Ritu covers the box with a wrapping sheet. Find the area of the wrapping sheet that covers the box exactly.

RISE OF NATION ACADEMY
Mathematics (SET-B)
Class 10

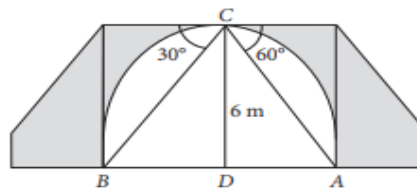
Min. Marks:- 20

MOCK TEST

Time: - 2 Hr.

Max. Marks:- 40

14. One day while sitting on the bridge across a river Arun observes the angles of depression of the banks on opposite sides of the river are 30° and 60° respectively as shown in the figure. (Take $\sqrt{3} = 1.73$)



Based on the above information, answer the following questions.

- (i) If the bridge is at a height of 6 m, then find the length of AD .
- (ii) Find the width of the river.

Address: - In front of Nagar Palika Nigam, Near BOI, Agar Road Ujjain.

Contact:- +919826448204,+919981108636, Email:- riseofnation.123@gmail.com