# THE EMERALD HEIGHTS INTERNATIONAL SCHOOL
## TERM II EXAMINATION (2021-22)
### SUBJECT: MATHEMATICS
### CLASS IX
### SET - B

**MAX.MARKS – 40**                                      **DURATION: 2 hours**
**DATE : 26/02/22**

## GENERAL INSTRUCTIONS

The question paper consists of 14 questions divided into 3 sections A, B, C.

Section A comprises of 6 questions of 2 marks each. Internal choice has been provided in two questions.

Section B comprises of 4 questions of 3 marks each. Internal choice has been provided in one question.

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.
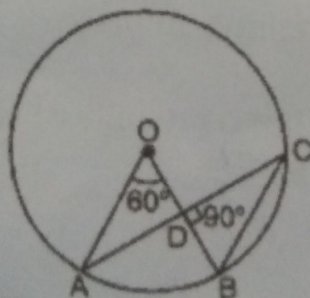
## SECTION A

**Q1.** If angles of a quadrilateral are in the ratio 3:5:9:13, then sum of the measures

of smallest and greatest angles is.

**Q2.** Factorise     $8 + 729x^3$

### OR

$1 - 512y^3$

**Q3.** In the given figure, O is the centre of the circle, $\angle AOB = 60°$ and

$\angle CDB = 90°$. Find $\angle OBC$.

Q4. In a football match, a goalkeeper of a team can stop a goal 32 times out of 40 shots by a team. What is the probability that opposite team can make a goal.

Q5. Find the side of the cube whose lateral surface area is 484 m² is.

OR

Diameter of the base of a cone is 10.5 cm and its slant height is 10 cm. Find its curved surface area.

Q6. A dice is rolled number of times and its outcomes are recorded as below :
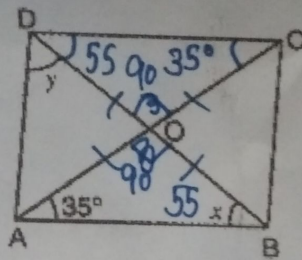
| Outcome | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Frequency | 35 | 45 | 50 | 38 | 53 | 29 |

Find the probability of getting a composite number.

## SECTION B

Q 7. The height of the hemisphere is 7cm. Find its total surface area.

Q8. In the figure, ABCD is a rhombus, whose diagonals meet at O. Find the values of x and y.



Q9. Check if $P(x) = x^3 - 5x^2 + 4x - 3$ is a multiple of $g(x) = x - 2$

OR

Find the value of 'm' if $x^3 - 2mx^2 + 16$ is a multiple of $x+2$

$-8 - 8m + 16 = 0$

Q10. Factorise the following

$1 - 64a^3 - 12a + 48a^2$

# SECTION C

Q11. If $p(x) = x^3 - 6x^2 + 11x - 6$ is the volume of a cuboid, then answer the following

    a) Find the length , breadth and height of the cuboid in terms of x.
    b) Find the zeroes of p(x).
    c) What is the difference of degree of p(x) and coefficient of x?
    d) What is the remainder when p(x) is divided by g(x)= x+1?

Q12. Construct a triangle ABC in which BC = 3.5cm, $\angle B = 90°$ and

    AB + AC =5.5cm.

### OR

Construct a triangle ABC in which BC = 6.4cm, $\angle B = 45°$ and AB – AC = 2.6cm

Q13. Prove that a cyclic parallelogram is a rectangle.

Q14. At a Ramzan Mela, a stall keeper in one of the food stalls has a large cylindrical vessel of base radius 15cm filled up to a height of 28 cm with orange juice. The juice is filled in small cylindrical glasses of radius 3 cm up to a height of 7 cm.

Based on the above information answer the following questions

    1. What is the volume of the cylindrical vessel?
    2. How many glasses of juice did he sell?
    3. How much money did he earn if he sold each glass for Rs. 4?
    4. Calculate the cost of one glass if he earned an amount of Rs.600.