



UNICUS OLYMPIADS

Sample Paper (2020-21)

Class 9

Unicus Mathematics Olympiad



Section – Class* <small>*Syllabus covered</small>	Total Questions	Marks per Questions	Total Questions
Classic Section – Class 8	28	1	28
Classic Section – Class 7	12	1	12
Scholar Section – Class 8	7	2	14
Scholar Section – Class 7	3	2	6
Grand Total	50		60

1. A man sets out on cycle from Meerut to Delhi and at the same time another man starts from Delhi to Meerut on cycle. After crossing each other they complete their journeys in 9 h and 16 h respectively. At what rate does the second man cycle if the first cycles at 16 km/h?

- a) 6 km/h
b) 8 km/h
c) 12 km/h
d) 15 km/h

Correct Answer: c

1 Mark

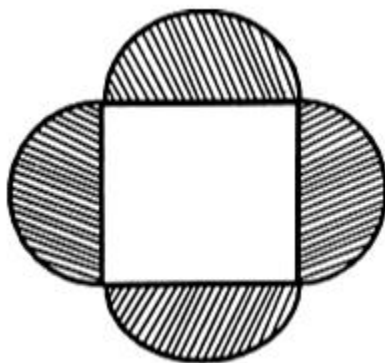
2. Monika is a Math's teacher who earns a monthly salary of Rs. 18,000. If the monthly expenditure pattern of her is represented in a pie diagram, then the sector angle of an item on transport expenses measures by 15° . Find her monthly expenditure on transport:

- a) Rs. 450
b) Rs. 575
c) Rs. 625
d) Rs. 750

Correct Answer: d

1 Mark

3. Look at the image given below. In the centre, there is a square, and on each side, there is a semicircle. The side of the square is 21 m. If each rose plant needs 6 m^2 of space, then find the number of plants that can be planted in this space:



- a) 163
b) 168
c) 176
d) 189

Correct Answer: d

1 Mark

4. There are some balls of different colours in a bag. The number of blue balls is twice the number of white balls and the number of red balls is thrice the number of blue balls. If the total number of balls in the bag is 54, then find the number of red balls present in the bag:

- a) 6
c) 24
- b) 12
d) 36

Correct Answer: d

1 Mark

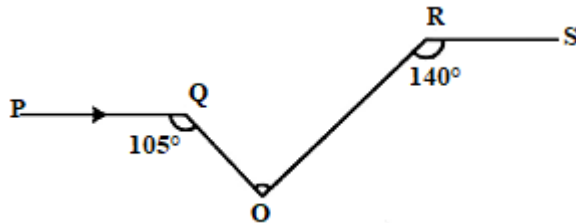
5. Priya labelled the price of an article in such a way so that she earns 25% profit on selling it. However, while selling she offered 6% discount on labelled price. If she sold it for Rs. 10,340, then find the cost price of the article:

- a) Rs. 8,000
c) Rs. 9,200
- b) Rs. 8,800
d) Rs. 9,850

Correct Answer: b

1 Mark

6. Look at the figure given below, in which $PQ \parallel RS$. If $\angle PQO = 105^\circ$ and $\angle SRO = 140^\circ$, then find the value of $\angle ROQ$:



- a) 40°
c) 75°
- b) 65°
d) 90°

Correct Answer: b

1 Mark

7. Aanya got married 6 years ago. Today her age is $1\frac{1}{4}$ times her age at the time of marriage. Her son's age is $\frac{1}{10}$ times her age. Find her son's age:

- a) 3 years
b) 6 years
c) 9 years
d) 12 years

Correct Answer: a

1 Mark

8. There are two numbers p and q such that their HCF is 1. Which of the following statements are correct?

- I. Both p and q may be prime.
II. One number may be prime and the other composite.
III. Both the numbers may be composite.

- a) Only I and II
b) Only II and III
c) Only I and III
d) I, II and III

Correct Answer: d

1 Mark

9. An office group hired three identical buses for a picnic. The office staff occupies $\frac{4}{5}$ of the seats. After $\frac{1}{4}$ of the staff leave, the remaining staff use only two of the buses. Find the fraction of the seats on the two buses that are now occupied:

- a) $\frac{7}{10}$
b) $\frac{7}{9}$
c) $\frac{9}{10}$
d) $\frac{8}{9}$

Correct Answer: c

2 Marks

10. PQRS is a square. X is the midpoint of PQ and Y is the midpoint of QR. Consider the following statements:

- I. $\triangle PSX$ and $\triangle QPY$ are congruent.
II. $\angle SXP = \angle PYQ$
III. SX is inclined at an $\angle 60^\circ$ with PY
IV. SX is not perpendicular to PY.

Which of the above statements are correct?

- a) I, III and IV
b) I and IV
c) I, II and IV
d) I and II

Correct Answer: d

2 Marks