



# UNICUS OLYMPIADS

## Sample Paper (2020-21)

Class 5 & 6

Unicus Non-Routine Mathematics Olympiad



| Section – Class*<br><small>*Syllabus covered</small> | Total Questions | Marks per Question | Total Marks |
|--|-----------------|--------------------|-------------|
| Classic Section – Class 5 & 6                        | 10              | 3                  | 30          |
| Scholar Section – Class 5 & 6                        | 10              | 6                  | 60          |
| <b>Grand Total</b>                                   | <b>20</b>       |                    | <b>90</b>   |

Note: There will be negative marking of  $1/3^{\text{rd}}$  of the marks allotted for that question if the answer is incorrect.

1. It  $P = A \times B$  and  $Q = C \times D$  where  $2A = 3B = 4C = 6D = 24$  then  $P/(Q \times 5)$  is
- a)  $2/5$
  - b)  $3/5$
  - c)  $4/5$
  - d)  $1/5$

**Correct Answer: c**

**3 Marks**

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2. The value of  $0.23 \times 1000 =$
- a)  $23.(23)\overline{}$
  - b)  $232.(32)\overline{}$
  - c)  $2.(32)\overline{}$
  - d)  $232.32$

**Correct Answer: b**

**3 Marks**

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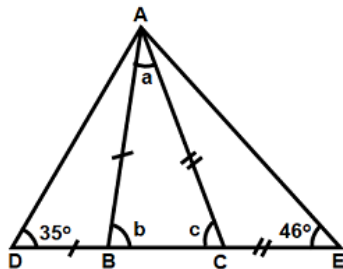
3. The sum of interior angle of the regular pentagon is
- a) 640
  - b) 740
  - c) 540
  - d) 620

**Correct Answer: c**

**3 Marks**

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4. In the given figure, what are the values of  $\angle b$ ,  $\angle c$  and  $\angle a$  respectively



- a)  $18^\circ, 70^\circ, \& 92^\circ$
- b)  $92^\circ, 70^\circ, \& 18^\circ$
- c)  $70^\circ, 92^\circ, \& 18^\circ$
- d)  $70^\circ, 18^\circ, \& 92^\circ$

**Correct Answer: c**

**3 Marks**

5. What is the mean of  $x$ ,  $x + 3$ ,  $x + 6$ ,  $x + 9$  and  $x + 12$ ?
- a)  $x + 3$
  - b)  $x + 6$
  - c)  $x + 9$
  - d)  $x + 12$

**Correct Answer: b**

*3 Marks*

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6. When a number is reduced by 4, it becomes 80% of itself. Find the number?
- a) 20
  - b) 30
  - c) 40
  - d) 50

**Correct Answer: a**

*3 Marks*

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7. In an examination 96% of the candidates passed and 50 failed. What is the number of candidates who appeared for the examination?
- a) 1520
  - b) 1250
  - c) 1530
  - d) 1350

**Correct Answer: a**

*3 Marks*

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8. The length & breadth of a rectangular plot are  $l$  and  $b$ . Two rectangular paths each of width ' $w$ ' run inside the plot one parallel to the breadth. What is the total area of the paths?
- a)  $(l + w)(b + w) - lb$
  - b)  $lb - (l - w)(b - w)$
  - c)  $(l + b - w)w$ .
  - d)  $lb - (l - 2w)(b - 2w)$

**Correct Answer: c**

*3 Marks*

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9. X packets of 6 sweets each are divided equally among 10 children. How many sweets does each child get?
- a)  $6x$
  - b)  $6x - 10$
  - c)  $3x/5$
  - d)  $3x - 5$

**Correct Answer: d**

*3 Marks*

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10. How many KMs does a bicycle wheel of radius 30 cm cover in 70 revolutions?
- a) 0.0132 KM
  - b) 1.32 KM
  - c) 13.2 KM
  - d) 0.132 KM

**Correct Answer: d**

*3 Marks*

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11.  $(1/4 \text{ of } 2^{2/7})$  when multiplied by  $6^{3/10} \times 2^{1/7} \times 35/9$  gives x and if  $y = 5/6$ . then  $x/y$  is \_\_\_\_\_.
- a)  $2^2 \times 3^2$
  - b)  $2^3 \times 3^2$
  - c)  $2^2 \times 3^3$
  - d)  $2 \times 3^4$

**Correct Answer: a**

*6 Marks*

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12. The number of pieces obtained when  $1\frac{3}{4}$  meters can be cut from a roll of ribbon of length 56 meters are  $30 + x$ . then  $x =$  \_\_\_\_\_
- a) 1
  - b) 2
  - c) 4
  - d) 6

**Correct Answer: b**

*6 Marks*

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13. The area of parallelogram is  $60\text{m}^2$  base is  $12\text{cm}$  then the distance between the parallel sides is \_\_\_\_\_.
- a) 10
  - b) 3
  - c) 5
  - d) 12

**Correct Answer: c**

*6 Marks*

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14. It  $4L + 2B + 3H = 228$  mts. Where  $L : B : H = 3 : 2 : 1$ , then the area of four walls
- a)  $1480\text{m}^2$
  - b)  $1440\text{m}^2$
  - c)  $1460\text{m}^2$
  - d)  $1420\text{m}^2$

**Correct Answer: b**

*6 Marks*

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15. The number of seats for admission is increased by 10% every year. If the number of seats in 2001 was 400. What was the number of seats in 2003?
- a) 824
  - b) 484
  - c) 500
  - d) 480

**Correct Answer: b**

*6 Marks*

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16. It  $(1 + x + x^2)/(1 - x + x^2) = 13(1 + x)/14(1 - x)$ , then  $x =$  \_\_\_\_\_
- a)  $1/3$
  - b) 3
  - c)  $2/3$
  - d)  $3/2$

**Correct Answer: a**

*6 Marks*

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17.  $A = Px^a.y^b$  :  $B = Qx^c.y^d$  where  $a = 2b = 3c = 4d = 12$ ,  $P = 3Q = 12$ , then  $A \div B$  is
- a)  $3x^8.y^3$
  - b)  $3x^3.y^8$
  - c)  $3x^2.y^3$
  - d)  $3xy$

**Correct Answer: a**

*6 Marks*

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18. If  $(x + 1/x)^2 - 2(x + 1/x)(x - 1/x) + (x - 1/x)^2$  is simplified as
- a)  $8/x^2$
  - b)  $16/x^2$
  - c)  $4/x^2$
  - d)  $2/x^2$

**Correct Answer: c**

*6 Marks*

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19. Sum of 10 observations is 250, If one observation, 25 is deleted, what is the new mean?
- a) 25
  - b) 20
  - c) 28
  - d) 22

**Correct Answer: a**

*6 Marks*

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20. A car travels 120 KM from A to B at 30 KM/hr. but returns the same distance at 40 km/hr. The Average speed for the round trip is closest to
- a) 33 KM/hr
  - b) 34 KM/hr
  - c) 36 KM/hr
  - d) 37 KM/hr

**Correct Answer: b**

*6 Marks*