Question **1**

What is the product of all the solutions of of the equation $x + \dfrac{10}{x-4} = -1$?

Select one:

- a. -6
- b. -5
- c. 6
- d. 1

Question **2**

In certain village, the ratio between adult men and adult women is $5:3$ and the ratio between adult men and children is $7:2$. What is the ratio between adults (men and women) and children?

Select one:

- a. $15:7$
- b. $28:5$
- c. $28:1$
- d. $5:1$

Question **3**

What is the unit digit of the number $324^3 + 324^0 + 324^2 + 324^5$?

Select one:

- a. 3
- b. 5
- c. 4
- d. 6

Question **4**

Five positive real numbers x, y, z, u and v are such that $xy = 2$, $yz = 3$, $zu = 4$, $uv = 5$. What is the value v/x?

Select one:

- a. $\frac{3}{2}$
- b. $\frac{15}{8}$
- c. $\frac{5}{6}$
- d. $\frac{4}{5}$

Question **5**

The perimeter of two similar triangles ABC and KLM are $18\ \mathrm{cm}$ and $12\ \mathrm{cm}$, respectively. The length of the line segment KL is $6\ \mathrm{cm}$. What is the length of the line segment AB?

Select one:

- a. $9\ \mathrm{cm}$
- b. $18\ \mathrm{cm}$
- c. $12\ \mathrm{cm}$
- d. $4\ \mathrm{cm}$

Question **6**

The sum of three consecutive integers is 15^{2020}. What is the middle number?

Select one:

- a. $5 \cdot 15^{2019}$
- b. 3^{2020}
- c. 5^{2020}
- d. $15 \cdot 5^{2019}$

Question **7**

If the price of an article is first decreased by 30 % and then increased by 20 %, then the net change in the price of the article will be:

Select one:

- a. 10 % decrease
- b. 10 % increase
- c. 4 % decrease
- d. 16 % decrease

Question **8**

The number $8^{2020} + 8^{2021} + 8^{2022} + 8^{2023}$ is divisible by

Select one:

- a. 11
- b. 3
- c. 17
- d. 7

Question **9**

We are given a regular hexagon $ABCDEF$. The area of the quadrilateral $BCEF$ is $4\,\text{cm}^2$. What is the area of the given hexagon in square centimetres?

Select one:

- a. 8
- b. $6\sqrt{2}$
- c. 6
- d. 5

Question **10**

How many different positive odd integers can be formed using the digits $3, 5, 6$ and 7 in which repetition of digits is not alowed?

Select one:

- a. 36
- b. 48
- c. 18
- d. 24

Correct answers:

1 C
2 B
3 B
4 B
5 A
6 A
7 D
8 B
9 C
10 B