Q1. In an election between two candidates, 75% of voters casted there votes, out of which 2% votes were declared invalid. A candidate got 9261 votes which were 75% of the valid votes. The total number of voters enrolled in that election was –

(a) 16000
(b) 16800
(c) 16400
(d) 18000

Q2. A traders allows a trade discount of 20% and a cash discount of $6\frac{1}{4}$%, on the marked price of the goods and gets a net gain of 20% of the cost. By how much above the cost should the goods be marked for the sale?

(a) 40%
(b) 50%
(c) 60%
(d) 70%

Q3. A person lent Rs. 5000 partly at the rate of 4% and partly at the rate of 5% p.a. at simple interest. The total interest after 2 years is Rs. 440. The sum of money lent at each of the above rates is to be divided in the ratio.

(a) 4 : 5
(b) 3 : 2
(c) 5 : 4
(d) 2 : 3

Q4. Vessels A & B contain mixtures of milk & water in the ratios 4 : 5 & 5 : 1 respectively. In what ratio should quantities of mixture be taken from A & B to form a mixtures in which milk to water is in the ratio 5 : 4?

(a) 2 : 5
(b) 4 : 3
(c) 5 : 2
(d) 2 : 3

Q5. 200 litres of mixture contains milk and water in the ratio 17 : 3. After the addition of some more milk to it, The ratio of milk to water is the resultant mixture becomes 7 : 1. The quantity of milk added to it was

(a) 20 L
(b) 40 L
(c) 60 L
(d) 80 L

Q6. A contractor was engaged to construct a road is 16 days. After 12 days with 20 labours it was found that only $\frac{5}{8}$th of the road had been constructed. To complete the work in stipulated time the number of extra labours required are

(a) 16
(b) 12
(c) 10
(d) 18

Q7. A tank has a leak which would empty the completely filled tank in 10 hours. If the tank is full of water and a tap is opened which admits 4 litres of water per minute in the tank, the leak takes 15 hours to empty the tank. How many litres of water does the tank hold?

(a) 2400 L
(b) 4500 L
(c) 1200 L
(d) 7200 L

Q8. A number being divided by 52 gives remainder 45. If the number is divided by 13, the remainder will be?

(a) 5 (b) 6

(c) 12 (d) 7

Q9. If $\mathbf{x^4 + \frac{1}{x^4}}$ = 119 and x > 1, then the value of $\mathbf{x^3 + \frac{1}{x^3}}$ is

(a) $6\sqrt{13}$ (b) $8\sqrt{13}$

(c) $13\sqrt{13}$ (d) $10\sqrt{13}$

Q10. If x = $\frac{\mathbf{4\sqrt{15}}}{\sqrt{5}+\sqrt{3}}$, the value of $\frac{\mathbf{x+\sqrt{20}}}{\mathbf{x-\sqrt{20}}} + \frac{\mathbf{x+\sqrt{12}}}{\mathbf{x-\sqrt{12}}}$ is

(a) 1 (b) 2

(c) $\sqrt{3}$ (d) $\sqrt{5}$

Q11. If $\boldsymbol{\theta}$ is a positive acute angle and tan 2$\boldsymbol{\theta}$.tan 3$\boldsymbol{\theta}$ = 1, then the value of $\mathbf{2\cos^2\frac{5\theta}{2} - 1}$ is

(a) $-\frac{1}{2}$ (b) 1

(c) 0 (d) $\frac{1}{2}$

Q12. There is a small island in the middle of a 100 metre wide river and a tall tree stands on the island. P and Q are points directly opposite to each other on two banks and in line with the tree. If the angles of elevation of the top of tree from P and Q are respectively 30° and 45°, find the height of the tree.

(a) 35.6 metre (b) 36.6 metre

(c) 37.6 metre (d) 46.6 metre

Q13. Two circles with centres A and B of radii 3 cm and 4 cm respectively intersect at two points C and D such that AC and BC are tangents to the two circles. Find the length of common chord CD.

(a) 4.4 cm (b) 4.3 cm

(c) 4.5 cm (d) 4.8 cm

Q14. The value of $\mathbf{3(\sin x - \cos x)^4 + 6(\sin x + \cos x)^2 + 4(\sin^6 x + \cos^6 x)}$ is

(a) 13 (b) 24

(c) 0 (d) 9

Q15. Four runners started running simultaneously from a point on a circular track. They took 200 seconds, 300 second, 360 seconds & 450 seconds to complete one round. After how much time do they meet at the starting point for the 1st time?

(a) 1800 sec (b) 3600 sec

(c) 2400 sec (d) 4800 sec

Q16. A solid metallic cone of height 10 cm, radius of base 20 cm is melted to make spherical balls each of 4 cm diameter. How many such balls can be made?

(a) 25 (b) 75

(c) 50 (d) 125

Q17. Find the largest number of 4 digits such that on dividing by 15, 18, 21 and 24 the remainders are 11, 14, 17 and 20 respectively ?

(a) 6557 (b) 7556
(c) 5675 (d) 7664

Q18. $(\mathbf{5^{19}+2})$ is divided by 6 the remainder will be ?

(a) 5 (b) 3
(c) 2 (d) 1

Q19. When $\mathbf{2^{31}}$ is divided by 5 the remainder is ?

(a) 4 (b) 3
(c) 2 (d) 1

Q20. $\mathbf{4^{61}+4^{62}+4^{63}}$ is divisible by ?

(a) 3 (b) 11
(c) 13 (d) 15

Q21. The unit digit of Expression$\mathbf{25^{6251}+36^{528}+73^{54}}$ is ?

(a) 6 (b) 5
(c) 4 (d) 0

Q22. When simplified the product $\mathbf{\left(2-\frac{1}{3}\right)\left(2-\frac{3}{5}\right)\left(2-\frac{5}{7}\right)\ldots\left(2-\frac{997}{999}\right)}$ **equals** ?

(a) $\frac{1001}{3}$ (b) $\frac{5}{3}$
(c) $\frac{5}{999}$ (d) $\frac{1001}{999}$

Q23. The value of $\mathbf{\frac{1}{20}+\frac{1}{30}+\frac{1}{42}+\frac{1}{56}+\frac{1}{72}+\frac{1}{90}}$ **is**

(a) $\frac{1}{10}$ (b) $\frac{3}{5}$
(c) $\frac{3}{20}$ (d) $\frac{7}{20}$

Q24. The digit in unit's place of the $\mathbf{(2153)^{167}}$ is ?

(a) 1 (b) 3
(c) 7 (d) 9

Q25. The digit in the unit's place of the product ?
$(2464)^{1793} \times (615)^{317} \times (131)^{491}$ is

(a) 0 (b) 2
(c) 3 (d) 5