Q1. A boat covers 20 km downstream in one hour and covers the same distance upstream in 2 hours then what is the speed of the boat in still water?
(a) 15 km/h
(b) 10 km/h
(c) 5 km/h
(d) 7.5 km/h

Q2. There are some benches in the class. If 4 students sit on each bench then 3 benches remains empty but when 3 students sit on each bench then 3 students could not get their seat. What is the total number of students in the class?
(a) 36
(b) 24
(c) 54
(d) 48

Q3. The sum of seven consecutive numbers is 175. What is the difference between twice of the largest number and thrice of the smallest number?
(a) 8
(b) 7
(c) 10
(d) 12

Q4. A trader invested one-third of his capital in business and half of the rest in share market. If there is Rs. 3,000 left with him then the total capital of the trader is
(a) Rs. 12000
(b) Rs. 9000
(c) Rs. 18000
(d) Rs. 15000

Q5. The simplified form of $\dfrac{1.\overline{3}\times1.\overline{3}\times1.\overline{3}-1}{1.\overline{3}\times1.\overline{3}\times1.\overline{3}+1}$ is

(a) $\dfrac{1}{3}$

(b) $1\dfrac{1}{3}$

(c) $\dfrac{37}{91}$

(d) $\dfrac{27}{91}$

Q6. The largest number among $0.7+\sqrt{0.16},\,1.02-\dfrac{0.6}{24},\,1.2\times0.83$ and $\sqrt{1.44}$ is

(a) $0.7+\sqrt{.016}$

(b) $\sqrt{1.44}$

(c) 1.2×0.83

(d) $1.02-\dfrac{0.6}{24}$

Q7. If $a=0.1039$ then the value of $\sqrt{4a^2-4a+1}+3a$ is

(a) 0.1039

(b) 0.2078

(c) 1.1039

(d) 2.1039

Q8. The value of $4^2+5^2+6^2+7^2+8^2+9^2+10^2+11^2+12^2$ will be

(a) 636

(b) 650

(c) 664

(d) 626

Q9. A sum of Rs 20000 becomes Rs 32000 in 12 years, when invested in a scheme of simple interest. If the same sum is invested in a scheme of compound interest with same yearly interest rate (compounding of interest is done yearly), then what will be the amount (in Rs) after 2 years?

(a) 21750

(b) 22050

(c) 23250

(d) 24650

Q10. A shopkeeper allows an extra discount of 12% on a radio after giving an initial discount of 20%. If the final selling price of the ratio is Rs. 704 then what is the marked price?
(a) Rs. 1000
(b) Rs. 1200
(c) Rs. 800
(d) Rs. 960

Q11. A, B and C can work together for Rs. 550/- A and B together are to do 7/11 of the work. The share of C should be?
(a) Rs. 200
(b) Rs. 300
(c) Rs. 400
(d) Rs. 450

Q12. In ∆ABC, the height CD intersects AB at D. The midpoints of AB and BC are P and Q respectively. If AD = 8 cm and CD = 6 cm, then the length of PQ is?
(a) 3 cm
(b) 7 cm
(c) 9 cm
(d) 5 cm

Q13. The price of a chair is Rs. 500. It has been sold at two succesive discounts of 10% each. What is its selling price?
(a) Rs. 400
(b) Rs. 405
(c) Rs. 415
(d) Rs. 425

Q14. The percent profit made when an article is sold for Rs. 78 is twice as much as when it is sold for Rs. 69, the cost price of the article is?
(a) Rs. 60
(b) Rs. 51
(c) Rs. 55.50
(d) Rs. 70

Q15. In a Village panchayat society 574 names are enlisted as 'below poverty level'. If 14% of the villagers are below poverty level, the total number of villagers is?
(a) 4100
(b) 4200
(c) 4000
(d) 3800

Q16. A train 240 meters in length crosses a telegraph post in 16 seconds. The speed of the train is?

(a) 50 Km/hr

(b) 52 Km/hr

(c) 54 Km/hr

(d) 56 Km/hr

Q17. If $a^2 + 1 = a$, then the value of a^3 is

(a) 0

(b) 1

(c) – 1

(d) 2

Q18. If $x + 3y = - 3x + y$, then $\frac{x^2}{2y^2}$ is equal to:

(a) 1/8

(b) 1/2

(c) 1/4

(d) 4

Q19. From an external point two tangents to a circle are drawn. The chord passing through the points of contact subtends an angle 72° at the centre. The angle between the tangents is?

(a) 36°

(b) 72°

(c) 108°

(d) 144°

Q20. Length of three line segments is given. Is construction of a triangle possible with the segments in the given cases?

(a) 8 cm, 7 cm, 18 cm

(b) 8 cm, 15 cm, 17 cm

(c) 10 cm, 6 cm, 4 cm

(d) 8 cm, 10 cm, 20 cm

Q21. If $\sin\theta + \csc\theta = 2$, then the value of $\sin^{-7}\theta + \csc^7\theta$ is:

(a) 2^7

(b) 2^{-7}

(c) 2

(d) 2^{-1}

Q22. A man has some hens and some cows. If the total number of heads of hens and cows together is 50 and the number of feet of hens and cows together is 142, then the number of cows is:

(a) 21

(b) 25

(c) 27

(d) 29

Q23. In a class, average height of all students is 'a' cms. Among them, average height of 10 students is 'b' cms and the average height of the remaining students is 'c' cms. Find the number of students in the class. (Here a > c and b > c)

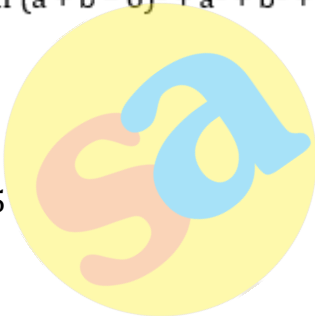(a) $(a(b – c))/(a – c)$

(b) $((b – c))/((a – c))$

(c) $(b – c)/(10(a – c))$

(d) $(10(b – c))/(a – c)$

Q24. The Simplified value of $\frac{3\sqrt{7}}{\sqrt{5}+\sqrt{2}} - \frac{5\sqrt{5}}{\sqrt{2}+\sqrt{7}} + \frac{2\sqrt{2}}{\sqrt{7}+\sqrt{5}}$ is:

(a) 0

(b) 1

(c) 5

(d) 6

Q25. If $(a + b – 6)^2 + a^2 + b^2 + 1 + 2b = 2ab + 2a$, then the value of a is

(a) 7

(b) 6

(c) 3.5

(d) 2.5