

Mathematics Quiz for RRB NTPC – Advanced Level

Q1. 12 persons working 8 hours a day can complete a work in 10 days. In how many days 18 persons working 7 hours day will complete 70% of work?

- (a) 9 days
- (b) $5\frac{1}{3}$ days
- (c) $6\frac{1}{5}$ days
- (d) $4\frac{1}{2}$ days

Q2. Let $\Delta ABC \sim QPR$ and $\frac{ar(ABC)}{ar(PQR)} = \frac{1}{16}$. If $AB = 3$ cm, $BC = 5$ cm and $AC = 7$ cm, then PQ is equal to –

- (a) 12 cm
- (b) 9 cm
- (c) 15 cm
- (d) 18 cm

Q3. ABCD is a cyclic quadrilateral such that AB is a diameter of the circle circumscribing it and $\angle ADC = 145^\circ$. What is the measure of the $\angle BAC$?

- (a) 65°
- (b) 75°
- (c) 45°
- (d) 55°

Q4. From the top of a 100 m high tower, the angle of depression of the top of a pole is 30° and the angle of depression of the foot of the pole is θ , such that $\tan\theta = \frac{2}{3}$. What is the height of the pole?

- (a) $50(2 - \sqrt{3})$ m
- (b) $50(2 + \sqrt{3})$ m
- (c) $100(2 + \sqrt{3})$ m
- (d) $100(2 - \sqrt{3})$ m

Q5. What is the ratio of mean proportion between 4.9 and 16.9 and third proportion between 3 and 7?

- (a) 61 : 59
- (b) 11 : 13
- (c) 43 : 57
- (d) 39 : 70

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Q6. If $x + \frac{1}{x} = 3$, find $x^5 + \frac{1}{x^5}$

- (a) 125
- (b) 128
- (c) 123
- (d) 121

Q7. If $\sec 3x = \operatorname{cosec} (4x-35^\circ)$, then x equal to -

- (a) 19.2
- (b) 18.3
- (c) 17.8
- (d) 14.7

Q8. A cuboid of edge 32 cm, 8 cm, 6 cm, is cut to form cube of edge 4 cm each. What is the sum of total surface area of all cubes formed?

- (a) 2304 cm²
- (b) 2010 cm²
- (c) 2107 cm²
- (d) 2086 cm²

Q9. If $a^3 - b^3 = 4104$ and $(a-b) = 6$, find $(a+b)^2 - ab$ is equal to-

- (a) 592
- (b) 684
- (c) 618
- (d) 612

Q10. In an examination, 33% passed in science and 57% failed in mathematics. If 41% failed in both subjects, what percentage passed in both subjects?

- (a) 21%
- (b) 23%
- (c) 17%
- (d) 27%

Q11. If a train runs with the speed of 78 km/hr, it reaches its destination late by 25 minutes. However, if its speed is 91 km/hr, it is late by 10 minutes only. The right time for the train to cover its journey is -

- (a) 60 minutes
- (b) 80 minutes
- (c) 75 minutes
- (d) 92 minutes

Q12. The efficiencies of A, B and C are in the ratio 7 : 6 : 9. Working together, they can complete a piece of work in 135 days. In how many days will, C alone be able to complete 65% of that work?

- (a) $202\frac{3}{5}$ days
- (b) $214\frac{1}{2}$ days
- (c) $197\frac{1}{2}$ days
- (d) 211 days

Q13. The length of shadow of a vertical pole on the ground is 36 m. if the angle of elevation of the sun at that time is θ , such that $\sin\theta = \frac{5}{13}$, then what is height of the pole?

- (a) 10 m
- (b) 12 m
- (c) 18 m
- (d) 15 m

Q14. If the seven digit number $3x6349y$ is divisible by 88, then what will be the value of $(x+y)$?

- (a) 15
- (b) 13
- (c) 17
- (d) 14

Q15. If $(x - 4)^3 + (3x - 7)^3 + (x - 2)^3 = 3(x - 4)(3x - 7)(x - 2)$ find the value of x .

- (a) 2.6
- (b) 4.2
- (c) 3.8
- (d) 6.1

Q16. $\frac{72.5 \times 72.5 \times 72.5 + 27.5 \times 27.5 \times 27.5}{7.25 \times 7.25 + 2.75 \times 2.75 - 7.25 \times 2.75}$ is equal to -

- (a) 10,000
- (b) 1000
- (c) 10
- (d) 100000

Q17. One side of a rhombus is 6.5 cm and one of its diagonal is 12 cm. what is the area of rhombus?

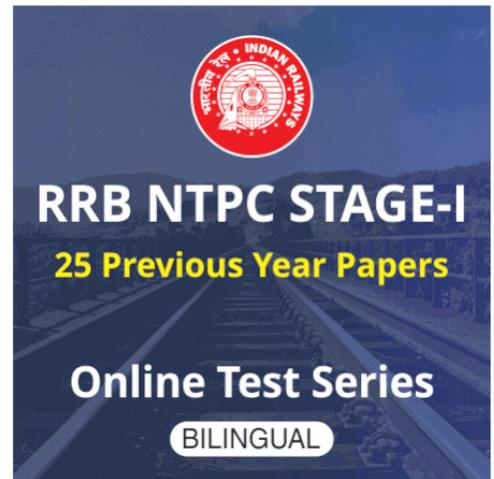
- (a) 20
- (b) 30
- (c) 35
- (d) 40

Q18. If the income of A is 27% less than income of B, then what percentage of B's income is more than that of A?

- (a) 36.98%
- (b) 42.85%
- (c) 61.23%
- (d) 49.27%

Q19. The price of sugar is increased by 12%. By what percentage, there should be decrease in consumption so then there is no change in expenditure?

- (a) 10.7%
- (b) 11.4%
- (c) 13.2%
- (d) 12.6%



Q20. In ΔABC , $\angle A = 35^\circ$, AB and AC are produced to points D and E respectively. If the bisectors of $\angle CBD$ and $\angle BCE$ meet at the point O, then $\angle BOC$ is equal to –

- (a) 72.5°
- (b) 67°
- (c) 69°
- (d) 70°

Q21. Pipe A and B can fill a tank in 12 hrs and 36 hrs respectively whereas pipe C can empty the fill tank in 72 hrs all three pipes are opened together, but pipe A is closed after 6 hours. After how many hours, the remaining part of the tank will be filled?

- (a) 28
- (b) 30
- (c) 26
- (d) 22

Q22. A shopkeeper sold two articles for Rs. 6979 each. on one he gained 11% and on the other he lost 11%. What is the overall percentage gain or loss?

- (a) 1.25% gain
- (b) 1.21% gain
- (c) 1.21% loss
- (d) 1.25% loss

Q23. The value of $\frac{\sin^2 45 + \cos^2 30 - \sec 35 \sin 55^\circ}{\tan^2 30 + \tan^2 60}$

- (a) $1/8$
- (b) $\sqrt{3}/2$
- (c) $2/9$
- (d) 0

Q24. PA and PB are two tangents from a point P outside the circle with centre O. if A and B are points on the circle such that $\angle APB = 135^\circ$, then $\angle OAB$ is equal to –

- (a) 72.5°
- (b) 81.5°
- (c) 67.5°
- (d) 90°

Q25. Two pipe A and B can fill a tank in 16 hours and 20 hours. Respectively. If they are opened alternatively for 1 hour each, starting with pipe B first, in how many hours will the empty tank be filled?

- (a) $15\frac{1}{3}$ hours
- (b) $16\frac{2}{3}$ hours
- (c) $17\frac{4}{5}$ hours
- (d) $19\frac{6}{7}$ hours

