

RRB NTPC Most Expected Mathematics Section 03

- Q1. A sum, when invested at 10% simple interest per annum, amounts to ₹2640 after 2 years. What is the simple interest (in ₹) on the same sum at the same rate of interest in 1 year?
- (a) ₹220
(b) ₹110
(c) ₹880
(d) ₹440
- Q2. A solid sphere of diameter 6 cm is melted and then cast into cylindrical wire of radius 0.3 cm. Find the length of the wire.
- (a) 50 cm
(b) 3 m
(c) 65 cm
(d) 4 m
- Q3. A real estate agent sells two sites for ₹48,000 each. On one he gains 35% and on the other he loses 35%. What is his loss or gain percentage?
- (a) 12.25% Loss
(b) 12.75% Profit
(c) 12.75% Loss
(d) 12.25% Profit
- Q4. Devvrat sold a commodity at a loss of 3%. If he would have been able to sell it at a profit of 15%, he would have received ₹1,494 more. What was the cost price (in ₹) of the commodity?
- (a) 8,350
(b) 8,400
(c) 8,300
(d) 8,250
- Q5. A boat covers 24 km upstream and 36 km downstream in 10 hours, and 36 km upstream and 24 km downstream in 12 hours. The speed of the current is:
- (a) $33/13$ km/h
(b) $26/9$ km/h
(c) $24/7$ km/h
(d) $25/8$ km/h
- Q6. A 250 m long train overtakes a man moving at a speed of 7 km/h (in same direction) in 36 seconds. How much time (in seconds) will it take this train to completely cross another 415 m long train, moving in the opposite direction at a speed of 82 km/h?
- (a) 17
(b) 30
(c) 21
(d) 31
- Q7. If $\cot \theta = 3/4$, θ is an acute angle, then $\sin \theta + \cos \theta - \tan \theta$ is equal to:
- (a) $1/11$
(b) $1/15$
(c) $1/13$
(d) $1/18$

- Q8.** The perpendicular length from the origin to the line $6x + 8y - 48 = 0$ is:
 (a) 2.6 unit
 (b) 4.8 unit
 (c) 8.3 unit
 (d) 5.2 unit
- Q9.** If $x = 110, y = 111, z = 112$, then find the value of $x^3 + y^3 + z^3 - 3xyz$.
 (a) 999
 (b) 995
 (c) 997
 (d) 991
- Q10.** The sum of the present ages of a father and son is 50 years. If after 5 years, the father's age will be 5 times the age of the son, then what was the father's age 5 years ago?
 (a) 36
 (b) 47
 (c) 43
 (d) 40
- Q11.** Radhika requested the cashier of a bank to get her coins in lieu of her cheque worth Rs. 1,845. Cashier gave her a packet containing Rs. 5, Rs. 10 and Rs. 20 coins in the ratio of 3: 5:7. What is the total worth of the smallest coin received by her?
 (a) Rs. 125
 (b) Rs. 105
 (c) Rs. 145
 (d) Rs. 135
- Q12.** Find the compound interest on ₹80,000 at 10% per annum for 2 years, compounded annually.
 (a) ₹20,800
 (b) ₹18,800
 (c) ₹22,800
 (d) ₹16,800
- Q13.** 2% of 14% of a number is what percentage of that number?
 (a) 0.028
 (b) 28
 (c) 16
 (d) 0.28
- Q14.** $\Delta ABC \sim \Delta EDF$ and area (ΔABC): area (ΔEDF) = 1:4. If $AB = 7\text{cm}$, $BC = 8\text{cm}$ and $CA = 9\text{cm}$ then DF is equal to:
 (a) 16 cm
 (b) 18 cm
 (c) 14 cm
 (d) 12 cm
- Q15.** Find the value of $\left[(14 \div 7) \times \left\{ \frac{84}{6} + \frac{14}{2} \times (5 - 3) \right\} \right]$
 (a) 54
 (b) 56
 (c) 42
 (d) 46

- Q16.** Anjali can do a certain piece of work in 16 days. Anjali and Ayushi can together do the same work in 10 days, and Anjali, Ayushi and Ankita can do the same work together in 8 days. In how many days can Anjali and Ankita do the same work?
- (a) $80/7$
(b) $72/7$
(c) $88/8$
(d) $83/9$
- Q17.** Evaluate: $16 + 18 \div 3 - 3 \times 3$
- (a) 13
(b) 15
(c) 12
(d) 16
- Q18.** The average age of 35 students in a group is 15 years. When the teacher's age is included, the average age of the group increases by 1.25 years. What is the teacher's age (in years)?
- (a) 45
(b) 60
(c) 55
(d) 50
- Q19.** If $\frac{3x}{1 + \frac{1}{1 + \frac{x}{1-x}}} = 12$, then find the value of 'x'.
- (a) 1.6
(b) 1.8
(c) 1.2
(d) 1.4
- Q20.** How much wheat (in kg, rounded off to the nearest integer) costing ₹36 per kg must be mixed with 55 kg of wheat costing ₹45 per kg so that there may be a gain of 20% by selling the mixture at ₹50 per kg?
- (a) 36
(b) 28
(c) 30
(d) 32
- Q21.** Ram, Ravi and Reena can do a piece of work in 16, 20 and 24 days, respectively. They began the work together but Ravi left the work 5 days before the completion of the work. In how much time did they finish the work together?
- (a) 10 Days
(b) 11 Days
(c) 8 Days
(d) 12 Days
- Q22.** The difference between the simple interest and the compound interest, compounded annually, on a certain sum of money for 2 years at 14% per annum is ₹633. Find the sum. [Give your answer to integral number without rounded off.]
- (a) ₹32282
(b) ₹32288
(c) ₹32313
(d) ₹32295

- Q23.** A line from point A is drawn that is tangent to the circle at point B. A secant is also drawn from point A to the circle intersecting it at points C and D. If $AB = 42$ cm and $AC = 21$ cm, then what is the ratio between AB and CD?
- (a) 2 : 3
(b) 2 : 5
(c) 3 : 2
(d) 3 : 4
- Q24.** Find the mean proportion to 0.72 and 2.85 (round up to one decimal place).
- (a) 0.4
(b) 2.8
(c) 0.7
(d) 1.4
- Q25.** The angle of elevation of a ladder leaning against a wall is 45° . The foot of the ladder is $4\sqrt{2}$ metres away from wall. The length of the ladder is:
- (a) 7 m
(b) 5 m
(c) 6 m
(d) 8 m
- Q26.** A pipe can fill a tank in 9 hours. Another pipe can empty the filled tank in 63 hours. If both the pipes are opened simultaneously, then the time (in hours) in which the tank will be two-third filled, is:
- (a) 28
(b) 21
(c) 14
(d) 7
- Q27.** The average of 12 numbers is 39. If the number 52 is also included, then what will be the average of these 13 numbers?
- (a) 43.33
(b) 46
(c) 42
(d) 40
- Q28.** The HCF and the LCM of Two numbers are 19 and 342, respectively. If one of the numbers is $\frac{9}{2}$ times of the other, What is the greatest number.
- (a) 124
(b) 186
(c) 154
(d) 171
- Q29.** The smallest 1-digit number to be added to the 6-digit number 910300 so that it is completely divisible by 11 is:
- (a) 6
(b) 2
(c) 9
(d) 5
- Q30.** Find the value of $8.25 \times 6 - 3.14 \times 7 + 2.758$ of $2.5 - 4.365 \times 5$.
- (a) 12.97
(b) 11.05
(c) 11.82
(d) 12.59

Solutions

S1. Ans.(a)

S2. Ans.(d)

S3. Ans.(a)

S4. Ans.(c)

S5. Ans.(d)

S6. Ans.(c)

S7. Ans.(b)

S8. Ans.(b)

S9. Ans.(a)

S10. Ans.(d)

S11. Ans.(d)

S12. Ans.(d)

S13. Ans.(d)

S14. Ans.(a)

S15. Ans.(b)

S16. Ans.(a)

S17. Ans.(a)

S18. Ans.(b)

S19. Ans.(a)

S20. Ans.(d)

S21. Ans.(c)

S22. Ans.(d)

S23. Ans.(a)

S24. Ans.(d)

S25. Ans.(d)

S26. Ans.(d)

S27. Ans.(d)

S28. Ans.(d)

S29. Ans.(d)

S30. Ans.(d)

