

CUET Mathematics Test - Set 24

Unit I: Numbers and Numerical Applications (Intermediate)

General Instructions

1. Total Questions: **15**
2. Duration: **60 Minutes**
3. All questions are compulsory.
4. Each question carries **5 marks**.
5. For each correct answer: **+5 marks**.
6. For each incorrect answer: **-1 mark**.
7. No negative marking for unanswered questions.
8. Use of calculator or electronic devices is strictly prohibited.
9. Choose the most appropriate answer from the given options.

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1. Find the value of x such that $5x \equiv 4 \pmod{11}$ where $x \in \{0, 1, \dots, 10\}$.
 - (A) 3
 - (B) 5
 - (C) 7
 - (D) 9
2. A mixture contains alcohol and water in the ratio 4 : 3. If 5 liters of water is added to the mixture, the ratio becomes 4 : 5. Find the quantity of alcohol in the given mixture.
 - (A) 10 liters
 - (B) 12 liters
 - (C) 15 liters
 - (D) 18 liters
3. A man can row 9 km/h in still water and the speed of the stream is 3 km/h. If he takes 3 hours more to go a certain distance upstream than to go the same distance downstream, find the distance.
 - (A) 18 km
 - (B) 24 km
 - (C) 36 km
 - (D) 42 km
4. Three pipes A, B and C can fill a tank in 6 hours. After working at it together for 2 hours, C is closed and A and B can fill the remaining part in 7 hours. The number of hours taken by C alone to fill the tank is:
 - (A) 10
 - (B) 12
 - (C) 14
 - (D) 16
5. In a 500m race, the ratio of the speeds of two contestants A and B is 3 : 4. A has a start of 140m. Then, A wins by:
 - (A) 10m
 - (B) 20m
 - (C) 30m
 - (D) 40m
6. If n is an integer such that $n \equiv 3 \pmod{7}$, then what is the remainder when $n^2 + 2n$ is divided by 7?
 - (A) 1
 - (B) 3
 - (C) 5
 - (D) 0
7. Two pipes can fill a tank in 10 hours and 12 hours respectively while a third pipe empties the full tank in 20 hours. If all the three pipes operate simultaneously, in how much time will the tank be filled?
 - (A) 7 hours 30 mins
 - (B) 8 hours
 - (C) 8 hours 20 mins
 - (D) 9 hours
8. A solution of salt and water contains 5% salt. If 20 liters of water is evaporated, the salt concentration becomes 15%. Find the initial quantity of the solution.
 - (A) 30 liters

- (B) 40 liters
(C) 50 liters
(D) 60 liters
9. A boat goes 24 km upstream and 28 km downstream in 6 hours. It goes 30 km upstream and 21 km downstream in 6 hours 30 minutes. The speed of the boat in still water is:
(A) 8 km/h
(B) 10 km/h
(C) 12 km/h
(D) 14 km/h
10. In a game of 1000 points, A can give B 100 points and A can give C 190 points. How many points can B give C in a game of 1000 points?
(A) 90
(B) 100
(C) 110
(D) 120
11. Find the last two digits of 5^{2026} .
(A) 05
(B) 25
(C) 75
(D) 15
12. A container contains 40 liters of milk. From this container, 4 liters of milk was taken out and replaced by water. This process was repeated further two times. How much milk is now contained by the container?
(A) 26.34 liters
(B) 27.36 liters
(C) 28 liters
(D) 29.16 liters
13. Two pipes A and B can fill a tank in 36 minutes and 45 minutes respectively. A water pipe C can empty the tank in 30 minutes. First A and B are opened. After 7 minutes, C is also opened. In how much time is the tank full?
(A) 39 minutes
(B) 42 minutes
(C) 45 minutes
(D) 46 minutes
14. If x is a positive integer, solve the inequality: $2(x - 3) < 5x + 9$.
(A) $x > -5$
(B) $x > 5$
(C) $x \geq 1$
(D) $x > 0$
15. Remainder when 3^{21} is divided by 5 is:
(A) 1
(B) 2
(C) 3
(D) 4

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