

CUET Mathematics Test

Chapter: Numbers and Numerical Applications

General Instructions

1. Total Questions: **20**
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 if $37 \equiv x \pmod{7}$, where $0 \leq x < 7$.
 - (A) 1
 - (B) 2
 - (C) 3
 - (D) 4
2. What is the last digit of 3^{2024} ?
 - (A) 1
 - (B) 3
 - (C) 7
 - (D) 9
3. A mixture contains milk and water in the ratio 5 : 1. On adding 5 liters of water, the ratio becomes 5 : 2. The quantity of milk in the original mixture is:
 - (A) 15 liters
 - (B) 25 liters
 - (C) 20 liters
 - (D) 30 liters
4. In what ratio must rice at 62 per kg be mixed with rice at 72 per kg so that the mixture is worth 64 per kg?
 - (A) 3 : 1
 - (B) 4 : 1
 - (C) 5 : 2
 - (D) 3 : 2
5. A boat can travel with a speed of 13 km/h in still water. If the speed of the stream is 4 km/h, find the time taken by the boat to go 68 km downstream.
 - (A) 3 hours
 - (B) 4 hours
 - (C) 5 hours
 - (D) 6 hours
6. A man can row 6 km/h in still water. If the river is running at 2 km/h, it takes him 3 hours to row to a place and back. How far is the place?
 - (A) 8 km
 - (B) 9 km
 - (C) 10 km
 - (D) 12 km
7. Pipe A can fill a tank in 20 hours while pipe B can fill the same tank in 30 hours. If both pipes are opened together, how long will it take to fill the tank?
 - (A) 10 hours
 - (B) 12 hours
 - (C) 15 hours
 - (D) 25 hours
8. Pipe A can fill a cistern in 12 minutes and pipe B can fill it in 15 minutes, but a third pipe C can empty it in 6 minutes. The first two pipes are kept open for 5 minutes in the beginning and then the third pipe is also opened. In what time is the cistern emptied?
 - (A) 30 minutes
 - (B) 33 minutes
 - (C) 45 minutes
 - (D) 48 minutes

9. In a 100m race, A beats B by 10m and B beats C by 10m. By how many meters does A beat C?
(A) 20m
(B) 19m
(C) 18m
(D) 21m
10. In a game of 100 points, A can give B 20 points and C 28 points. Then B can give C:
(A) 8 points
(B) 10 points
(C) 12 points
(D) 14 points
11. Solve the inequality $3x - 5 < x + 7$ for $x \in \mathbb{N}$.
(A) $\{1, 2, 3, 4, 5\}$
(B) $\{1, 2, 3, 4, 5, 6\}$
(C) $\{0, 1, 2, 3, 4, 5\}$
(D) $\{1, 2, 3, 4\}$
12. If $a < b$, then which of the following is always true?
(A) $a^2 < b^2$
(B) $1/a > 1/b$
(C) $a - c < b - c$
(D) $ac < bc$
13. Find the remainder when 2^{100} is divided by 7.
(A) 1
(B) 2
(C) 4
(D) 6
14. A can run 1 km in 3 minutes 10 seconds and B can cover the same distance in 3 minutes 20 seconds. By what distance can A beat B?
(A) 40 m
(B) 50 m
(C) 60 m
(D) 80 m
15. A jar contains a mixture of two liquids A and B in the ratio 4 : 1. When 10 liters of the mixture is replaced with 10 liters of liquid B, the ratio becomes 2 : 3. The original quantity of liquid A was:
(A) 16 liters
(B) 20 liters
(C) 24 liters
(D) 32 liters
16. A tap can fill a tank in 6 hours. After half the tank is filled, three more similar taps are opened. What is the total time taken to fill the tank completely?
(A) 3 hours 15 minutes
(B) 3 hours 45 minutes
(C) 4 hours
(D) 4 hours 15 minutes
17. Speed of a boat in standing water is 9 km/h and the speed of the stream is 1.5 km/h. A man rows to a place at a distance of 105 km and comes back to the starting point. The

- total time taken by him is:
- (A) 16 hours
 - (B) 18 hours
 - (C) 20 hours
 - (D) 24 hours
18. If $13x \equiv 5 \pmod{11}$, then one of the possible values of x is:
- (A) 7
 - (B) 8
 - (C) 9
 - (D) 10
19. Two pipes A and B can fill a tank in 15 minutes and 20 minutes respectively. Both pipes are opened together, but at the end of 4 minutes, pipe A is turned off. What is the total time required to fill the tank?
- (A) 10 minutes 20 seconds
 - (B) 11 minutes 40 seconds
 - (C) 12 minutes 30 seconds
 - (D) 14 minutes 40 seconds
20. If x is a positive integer such that $x + 5 > 12$ and $x - 3 < 10$, how many values can x take?
- (A) 4
 - (B) 5
 - (C) 6
 - (D) 7

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