

Examrace**IJSO (Indian Junior Science Olympiad) Mock Paper – Mathematics, Physics, Chemistry and Biology Part 2**

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15. If $\frac{37}{13} = 2 + \frac{1}{x + \frac{1}{y + \frac{1}{z}}}$, where x, y, z are natural numbers, then x, y, z are:

- A. 1,2, 5
- B. 1,5, 2
- C. 5,2, 11
- D. 11,2, 5

16. Find the value of $\left(2\frac{1}{4} - 1\right) \left(2\frac{3}{4} + 2\frac{1}{2} + 2\frac{1}{4} + 1\right)$

- A. 2
- B. 3
- C. 5
- D. 1

17. If $\sqrt{86.49} + \sqrt{5 + k^2} = 12.3$, then k is equal to:

- A. $\sqrt{10}$
- B. $2\sqrt{5}$
- C. $3\sqrt{5}$
- D. 2

18. Find the remainder of $25^n \div 15$ where $n = 97^{98}$

- A. 10
- B. 5
- C. 15
- D. None of these

19. What least number must be added to each of the numbers 5, 11, 19 and 37 so that they are in proportion?

- A. 6
- B. 2
- C. 4
- D. 9

20. $\frac{6}{3 - \sqrt{3 - x}}$ is equivalent to

- A. $\frac{18 + 6\sqrt{3 + x}}{x^2}$
- B. $\frac{3\sqrt{3 - x}}{1 + x}$
- C. $\frac{4\sqrt{3 - x}}{1 + x}$
- D. None of these

Physics

21. A man throws a ball making an angle of 60° with the horizontal. He runs on a level ground and catches the ball. If he had thrown the ball with speed v , then his speed must be:

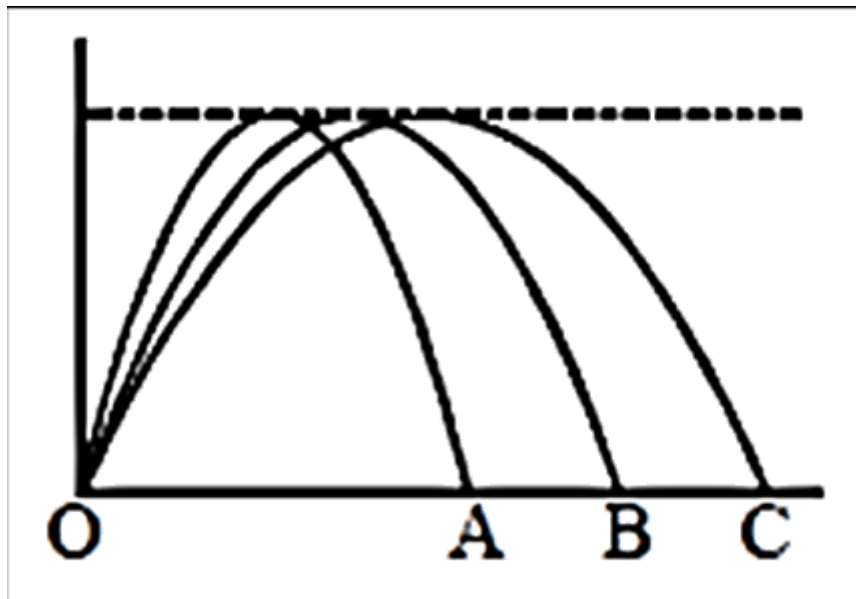
- A. V
- B. $\frac{V}{2}$
- C. $2v$
- D. \sqrt{v}

22. A particle is moving eastwards with a velocity of 5 m/s. In 10 seconds, the velocity changes to 5 m/s northwards. The average acceleration of the particle is:

- A. 0
- B. $\frac{1}{\sqrt{2}} m/s^2$ towards north-west
- C. $\frac{1}{\sqrt{2}} m/s^2$ towards north-east

D. $\frac{1}{\sqrt{2}}m/s^2$ towards south-east

23. Three projectile A, B and C are thrown from the same point in the same plane. Their trajectories are shown in the figure. Then which of the following statement is true:



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- A. The time of flight is the same for all (lie three
- B. The launch speed is greatest for particle C
- C. The horizontal velocity component is greatest for particle C
- D. All of the above

24. A car is moving with velocity V . If car stop after applying break at a distance of 20m. If velocity of car is doubled, then how much distance it will cover (travel) after applying break:

- A. 40 m

B. 80 m

C. 160 m

D. 320 m

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