
TEST # VII - 03, Aug 2023

NAME: _____

Total Time: 1:30 Hr

M.M: 150

INSTRUCTIONS

1. The paper consists of two sections A & B. Section A – Mathematics & Section B - Science.
2. The objective paper is designed by considering School Exam, NTSE & IIT Foundation.
3. The marking system is given just before the start of the Part in each section.
4. Blank papers, clipboards, log tables, slide rules, calculators, cameras, cellular phones, pagers and electronic gadgets are NOT allowed during exam.
5. The maximum mark allotted to the paper is 150.
6. Total time allotted for the exam is 1:30 Hours.
7. SECTION – A (MATHEMATICS) Questions No's: 1 – 15.
SECTION – B (SCIENCE) Questions No's 16 – 45.

Mathsarc Test Series

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Invigilator Sign

Test is just a crosscheck of our learning during the month! So, be honest with thyself!

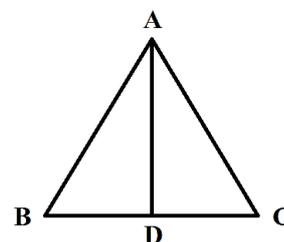
SECTION - A (MATHEMATICS)

PART - I

SINGLE OPTION CORRECT (+ 4, - 1, 0)

1. In an equilateral triangle ABC (Figure shown), AD is an altitude. Then $4AD^2$ is equal to

- (A) $2 BD^2$ (B) BC^2
(C) $3 AB^2$ (D) $2 DC^2$



2. Complementary angle of 25° is equal to

- (A) 55° (B) 65° (C) 155° (D) 35°

3. The solution of the equation $ax + b = 0$ is

- (A) $\frac{a}{b}$ (B) $-b$ (C) $-\frac{b}{a}$ (D) $\frac{b}{a}$

4. A truck can be loaded with a maximum of 1200 kg of weight. If it is already loaded with 2 containers weighing 506.50 kg and 313.80 kg respectively, how much more weight can be loaded in the truck?

- (A) 820.30 kg (B) 379.70 kg (C) 279.70 kg (D) 369.30 kg

5. Which one of the following is not a criterion for congruence of two triangles?

- (A) ASA (B) SSA (C) SAS (D) SSS

ROUGH SPACE

←~■: ☺ ☺ Best of Luck! ☺ ☺ :■~→

6. The number of lines of symmetry in Fig. 12.14 is

- (A) 1 (B) 3
(C) 6 (D) Infinitely many

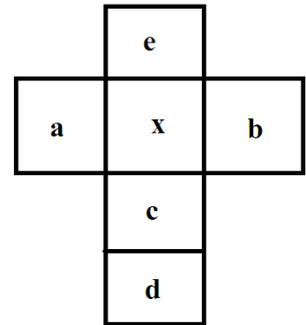


7. If the mean of 26, 28, 25, x , 24 is 27, find the value of x .

- (A) 22 (B) 20 (C) 39 (D) 32

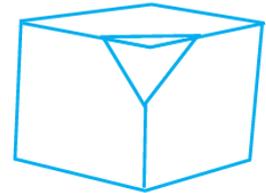
8. If we write the numbers 2, 3, 4, 5, 6 & 7 in the box so that each line of cross add up to 17 as shown in the figure. Then select the **Wrong** option

- (A) $x = 7$
(B) if $a > b$ then $a = 6$
(C) $c + d + e = 9$
(D) $x > d$



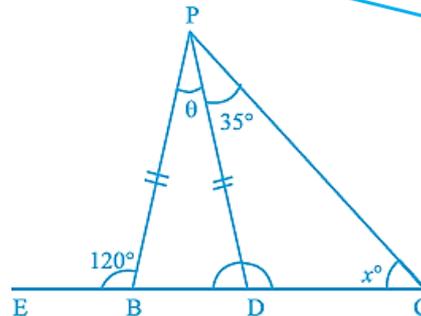
9. When we cut a corner of a cube as shown in the figure, we get the cutout piece as:

- (A) square pyramid (B) trapezium prism
(C) triangular pyramid (D) a triangle



10. In figure, $PB = PD$. The value of x is

- (A) 85° (B) 90°
(C) 25° (D) 35°



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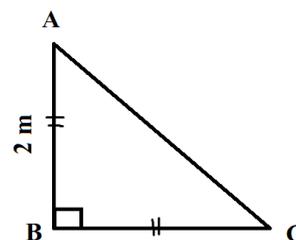
←~■: ☺ ☺ Best of Luck! ☺ ☺ :■~→

PART - II

MULTI OPTION CORRECT (+ 4, -1, 0).

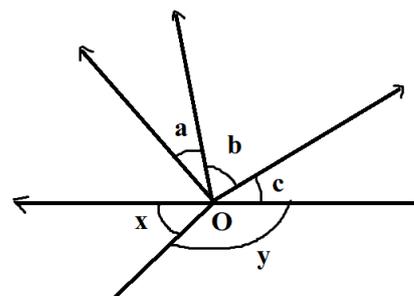
11. Select the correct option(s). Consider an Isosceles right angle triangle ABC as shown in the figure, with $\angle B = 90^\circ$.

- (A) $\angle A = 45^\circ$ (B) $AC^2 = 8m$
 (C) $2\angle A = \angle B$ (D) $AB = BC$



12. Consider the figure as shown

- (A) x & y are complementary angles.
 (B) angles x and y are adjacent angles & Linear pair
 (C) a & c are adjacent angle
 (D) If $a + b = 90$ then a & b are supplementary of each other

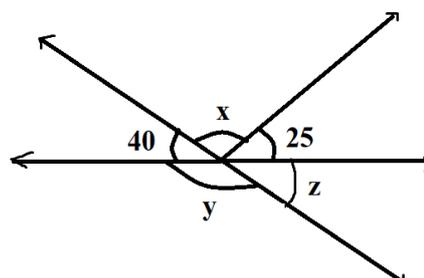


13. Select the correct equation, solution pair

- (A) $43m = 0.086, m = 0.002$ (B) $2x - \frac{3}{2} = 4x + \frac{5}{2}, x = 2$
 (C) $\frac{2x-3}{5} + \frac{1}{2} = 3x, x = -\frac{1}{26}$ (D) $\frac{x-2}{3} = x, x = 1$

14. Consider the figure as shown. Select the correct option(s)

- (A) $x^\circ = y^\circ$
 (B) $z = 40$
 (C) $x = 115^\circ$
 (D) $y + z = 180^\circ$



15. Select the correct option(s)

- (A) $-\frac{1}{3} < -\frac{3}{4} < 0 < \frac{7}{12}$ (B) $\{49 \div (-7) - (-15)\} + 4 \times (-7 + 3)$ equals - 8
 (C) $\frac{2}{3}$ of $\left(\frac{1}{4} + \frac{1}{2} - \frac{3}{8}\right) \div 1\frac{1}{2}$ equals $\frac{1}{6}$ (D) $(-2) \times (3) \times (-1) \times (-2)$ equals - 12

ROUGH SPACE

←~■: ☺ ☺ Best of Luck! ☺ ☺ :■~→

SECTION - B (SCIENCE)

PART - I (PHYSICS)

SINGLE OPTION CORRECT (+ 3, - 1, 0)

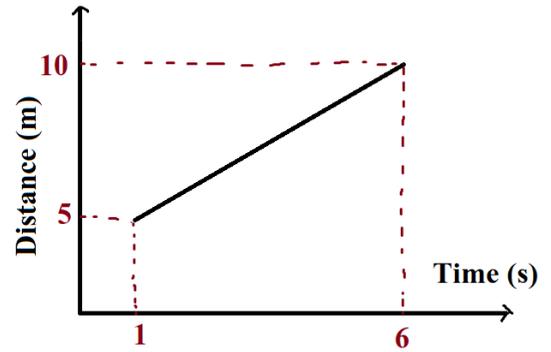
16. A pencil is lying on a table is an example of
(A) a body at rest (B) a body in motion
(C) a body neither at rest nor in motion (D) pencil is taking rest on the table
17. The motion of a pendulum is
(A) rotary (B) oscillatory (C) curvilinear (D) rectilinear
18. A pendulum swing from one end to another end in 0.5 second. Then its time period is
(A) 0.5 seconds (B) 0.25 seconds (C) 1 second (D) 2 seconds
19. A car is moving with speed 72 km/h then its speed in SI unit is ____
(A) 2 cm/s (B) 1 cm/s (C) 20 m/s (D) 1200 m/s
20. A Cyclist travels a distance of 1 km in the first hour, 0.5 km in the second hour and 0.3 km in the third hour. Find the average speed of the cyclist in km/h
(A) 0.6 (B) 0.3 (C) 1 (D) None of these
21. Total number of seconds in a complete day (i.e. 24 hours).
(A) 1440 (B) 3600 (C) 43200 (D) 86400
22. Select the correct match
(A) Odometer → instantaneous speed (B) Speedometer → average speed
(C) Sand Clock → distance (D) Sundial → Time

ROUGH SPACE

←~■: ☺☺ Best of Luck! ☺☺ :■~→

23. Consider the figure as shown for an object motion. Then select the **wrong** option

- (A) Average speed = 1 m/s
- (B) Object motion is uniform
- (C) total distance traveled by object in 5 sec = 10 m
- (D) Object starts moving at $t = 1$ second



24. A car travels with speed 30 km/h for 30 minutes and then with speed 40 km/h for one hour. Then

- (A) Total distance travelled by car is 50 km
- (B) Total time of travels is 2 hours
- (C) the average speed of the car is 36.67 km/h
- (D) None of these

25. Stainless steel pans are usually provided with copper bottoms. The reason for this could be that

- (A) copper bottom makes the pan more durable.
- (B) such pans appear colourful.
- (C) copper is a better conductor of heat than the stainless steel.
- (D) copper is easier to clean than the stainless steel.

ROUGH SPACE

←~■: ☺ ☺ Best of Luck! ☺ ☺ :■~→

PART – II (CHEMISTRY)

SINGLE OPTION CORRECT (+ 3, - 1, 0)

26. What type of change occurs when ice melts to form water?
(A) Physical change (B) Chemical change (C) Nuclear change (D) Biological change
27. Rust forming on iron is an example of:
(A) Physical change (B) Chemical change (C) Reversible change (D) Temporary change
28. Cooking an egg is an example of:
(A) Physical change (B) Chemical change (C) State change (D) Mechanical change
29. Cutting a piece of paper into smaller pieces is an example of:
(A) Physical change (B) Chemical change (C) Dissolution (D) Irreversible change
30. Burning of wood is an example of:
(A) Physical change (B) Chemical change (C) Evaporation (D) Boiling
31. Lemon juice is acidic due to the presence of which acid?
(A) Sulphuric acid (B) Citric acid (C) Hydrochloric acid (D) Nitric acid
32. A substance with a pH of 9 is considered:
(A) Acidic (B) Neutral (C) Alkaline (basic) (D) Saline
33. Which of the following is a strong base?
(A) Sodium hydroxide (NaOH) (B) Vinegar
(C) Lemon juice (D) Carbonic acid
34. Ammonia (NH₃) is a common example of a:
(A) Acid (B) Base (C) Salt (D) Neutral substance
35. When an acid reacts with a base, the products are:
(A) Water and salt (B) Water and sugar (C) Water and oil (D) Water and gas

PART – III (BIOLOGY)

SINGLE OPTION CORRECT (+ 3, - 1, 0)

36. The type of teeth used for biting and cutting the food
(A) Incisors (B) Canines (C) Premolars (D) Molars
37. The temporary stomach in Amoeba is:
(A) Cytoplasm (B) Pseudopodia (C) Nucleus (D) Vacuole
38. The type of teeth used for chewing and grinding the food in a child
(A) Incisors (B) Canines (C) Premolars (D) Molars
39. The process of taking in food by an animal and its utilization in the body is called:
(A) Ingestion (B) Digestion (C) Nutrition (D) egestion
40. The site of complete digestion and absorption is:
(A) Stomach (B) small intestine (C) large intestine (D) rectum
41. The millions of finger like outgrowth in the inner wall of small intestine are called:
(A) veins (B) buds (C) capillaries (D) Villi
42. The length of the small intestine in adult human being is about:
(A) 1.5 m (B) 7.5 m (C) 4.5 m (D) 2.5 m
43. Which of the following is for biting and cutting food
(A) molars (B) premolars (C) Canine (D) incisors
44. Which of the following can digest cellulose carbohydrate present in its food:
(A) cow (B) Lion (C) Human (D) Cat
45. Which of the following is incorrect statement in respect to amoeba:
(A) It has no fixed shape (B) It has no fixed mouth
(C) it has a false foot (D) it has a digestive system



Keep smiling!

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ANSWER KEY

- | | | | |
|----------|-------------|----------------|----------|
| 1. C | 2. B | 3. C | 4. B |
| 5. B | 6. B | 7. D | 8. C |
| 9. C | 10. C | 11. A, B, C, D | 12. B, D |
| 13. A, C | 14. B, C, D | 15. B, C, D | 16. A |
| 17. B | 18. C | 19. C | 20. A |
| 21. D | 22. D | 23. C | 24. C |
| 25. C | 26. A | 27. B | 28. B |
| 29. A | 30. B | 31. B | 32. C |
| 33. A | 34. B | 35. A | 36. A |
| 37. D | 38. C | 39. C | 40. B |
| 41. D | 42. B | 43. D | 44. A |
| 45. D | | | |