



Aakash

Medical | IIT-JEE | Foundations

(Divisions of Aakash Educational Services Limited)

Regd. Office : Aakash Tower, 8, Pusa Road, New Delhi-110005

Ph.: 011-47623456

Aakash National Talent Hunt Exam 2020

Sample Paper

(Class VIII Studying Moving to Class IX)

ANSWERS

- | | |
|--|----------------------------------|
| 1. (4) | 19. (1, 3, 4) |
| 2. (4) | 20. (3) |
| 3. (1) | 21. A(Q), B(R), C (Q, S), D(P) |
| 4. (4) | 22. (1) |
| 5. (1, 2, 4) | 23. (3) |
| 6. (3) | 24. (4) |
| 7. A(Q), B(P), C(S), D(P, Q, R, S) | 25. (3) |
| 8. (2) | 26. (1, 2, 4) |
| 9. (3) | 27. (1) |
| 10. (3) | 28. A(P, S), B(R), C(Q), D(P, S) |
| 11. (3) | 29. (3) |
| 12. (1, 3, 4) | 30. (1) |
| 13. (2) | 31. (2) |
| 14. A(R, S), B(R, S), C(P, Q), D(P, Q) | 32. (3) |
| 15. (2) | 33. (1) |
| 16. (2) | 34. (3, 4) |
| 17. (2) | 35. (1, 4) |
| 18. (4) | |



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HINTS & SOLUTIONS

PHYSICS

1. Answer (4)

Since vertical height of liquid column at point A, B and C is same so pressure will be same at these points.

2. Answer (4)

Honey is a poor conductor of electricity.

3. Answer (1)

$$\therefore \text{Frequency} = \frac{1}{\text{Time period}}$$

$$\text{Frequency} \times \text{Time period} = 1$$

4. Answer (4)

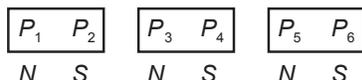
Time period of pendulum = 5 + 1 = 6 s

At $t = 21$ s pendulum will be at position-D and completes three and half oscillations

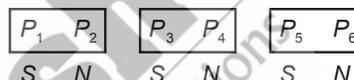
At $t = 22$ s pendulum will be in between position C and D.

5. Answer (1, 2, 4)

Case-I



Case-II



6. Answer (3)

Friction helps us to write. Friction exerted by paper is greater than that is exerted by the smooth glass sheet. So it is easier to write on paper than on a glass sheet.

7. Answer A(Q), B(P), C(S), D(P, Q, R, S)

The force required to overcome friction at the instant an object starts moving from rest is a measure of static friction. While force required to keep the object moving with the same speed is measure of sliding friction.

When one body rolls over the surface of another body, the resistance to its motion is called rolling friction.

If two equal and opposite forces are acting on an object, net force acting on an object is zero.

CHEMISTRY

8. Answer (2)

Synthetic fibre 'X' (nylon) is used to make car seat belts, sleeping bags etc. Thermosetting plastic 'Y' (Bakelite) is used for making electrical switches. Thermosetting plastic 'Z' (melamine) is a flame resistant.

9. Answer (3)

Aluminium is a metal and the acid present in lemon reacts with aluminium to liberate hydrogen gas. This can lead to the spoilage of the pickle.

10. Answer (3)

Calcium is neither a non-metal nor used in crackers.

11. Answer (3)

Sodium and potassium are very reactive metals which reacts vigorously with oxygen and water.

12. Answer (1, 3, 4)

Generally nylon is used for making parachutes and ropes for rock-climbing as rayon fibres are not so strong. Petrochemicals are the materials of petroleum origin. Plastic is a non-biodegradable material.

13. Answer (2)

Aluminium is a metal which is malleable and ductile.

14. Answer A(R, S), B(R, S), C(P, Q), D(P, Q)

(A) Cotton and (B) Jute are natural fibres and good absorber of water.

(C) Acrylic and (D) Polyester are synthetic fibres which melt on heating.

BIOLOGY

15. Answer (2)

Robert Hooke coined the term 'cell'.

16. Answer (2)

Nerve cells are long and branched in shape.

17. Answer (2)

Red Data Book is the source book which keeps a record of all the endangered animals and plants.

18. Answer (4)

Female *Aedes* mosquito acts as carrier of dengue virus.

19. Answer (1, 3, 4)

The given agricultural implement is plough which is used for tilling the soil, adding fertilizers to the crop, removing the weeds and turning the soil. It is made up of wood and is drawn by a pair of bulls or other animals (horses and camels).

20. Answer (3)

Viruses are microscopic but are different from other microorganisms. They however, reproduce only inside the cells of the host organism, which may be a bacterium, plant or animal.

21. Answer A(Q), B(R), C (Q, S), D(P)

(A) Sprinkler system is the modern method of irrigation.

(B) Chain pump is the traditional method of irrigation.

(C) Drip system is the modern method of irrigation and it is the best technique for watering fruit plants and trees.

(D) Combine is a harvester as well as thresher.

MATHEMATICS

22. Answer (1)

Let A's pocket money be ₹100,

B's pocket money = ₹130

$$\begin{aligned} \text{C's pocket money} &= \frac{30}{100} \times 130 + 130 \\ &= ₹169 \end{aligned}$$

23. Answer (3)

$$x = \frac{n}{m} = \frac{\text{positive}}{\text{negative}}$$

x = negative integer

24. Answer (4)

$$\text{Additive inverse of } \left(\frac{1}{7} + \frac{4}{15}\right)^{-1} \text{ is } \frac{-105}{43}$$

$$\text{Required rational number} = \frac{-940}{473}$$

25. Answer (3)

$$\sqrt{1234321} = 1111 \text{ and } (51)^2 = 2601$$

$$2601 - 1111 = 1490$$

∴ 31 should be added to 1490

26. Answer (1, 2, 4)

All statements are correct **except** (3)

27. Answer (1)

$$\text{A : } x^3 = 125$$

$$\Rightarrow x = 5$$

$$\text{R : } \sqrt[3]{125} = 5$$

Reason is the correct explanation of Assertion

28. Answer A(P, S), B(R), C(Q), D(P, S)

(A) No. of sides = $\frac{360^\circ}{30^\circ} = 12$

(B) $\angle R + \angle E = 180^\circ$

$\Rightarrow \angle E = 180^\circ - 108^\circ = 72^\circ$

(C) $\angle AFD = 52^\circ$

$\Rightarrow \angle ADF = 72^\circ$

$\angle ADG = 34^\circ$ and $\angle MDF = 20^\circ$

$\therefore \angle ADG - \angle MDF = 14^\circ$

(D) No. of sides = $\frac{360^\circ}{(180^\circ - 150^\circ)} = \frac{360^\circ}{30^\circ} = 12$

MENTAL ABILITY

29. Answer (3)

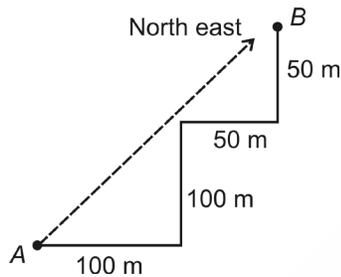
Figure is rotating by 45° clockwise and dots increased by 2. Shaded portion shifting alternatively.

30. Answer (1)

$236 : (2 \times 3) + 6 = 12$

$339 : (3 \times 3) + 9 = 18$

31. Answer (2)



32. Answer (3)

The $(15 - 7)^{\text{th}}$ term from left end is '7'

33. Answer (1)

By observation we find that II figure is water image of I figure.

34. Answer (3, 4)

Only 5 and 7 are present more than 5 times in given pattern.

35. Answer (1, 4)

All numbers are perfect cubes other than 236 and 344.



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