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(SCHOLARS INTEGRAL MATHS & SCIENCE OLYMPIADS)



## BIGGEST NATIONAL LEVEL OLYMPIADS (STAGE - II) : 2025-26

MAX. MARKS : 90

SISO QUESTION PAPER

TIME: 60 MIN.

NAME OF THE STUDENT : .....

HALL TICKET NUMBER : .....

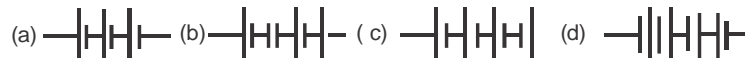
NAME OF THE SCHOOL : .....

### INSTRUCTIONS TO THE STUDENTS :

- ☞ Write your Hall ticket number immediately after receiving the question paper booklet.
- ☞ Darken the answers only on the OMR Sheet.
- ☞ Read the instructions given on the OMR sheet and follow them accordingly.
- ☞ Don't write any thing on the question paper booklet.
- ☞ To do rough work, use only the white paper provided in the examination hall.
- ☞ **No negative marks.**
- ☞ This question paper booklet consists of 30 questions.
- ☞ **PHYSICS (Q.No-1 to 10) :**  
First 7 questions (1 to 7) are single correct answer type.  
Each question carries THREE marks.  
Next 3 questions (8 to 10) are one or more than one correct answer type. Each question carries THREE marks.
- ☞ **CHEMISTRY (Q.No-11 to 20) :**  
First 7 questions (11 to 17) are single correct answer type.  
Each question carries THREE marks.  
Next 3 questions (18 to 20) are one or more than one correct answer type. Each question carries THREE marks.
- ☞ **BIOLOGY (Q.No-21 to 30) :**  
All questions (21 to 30) are single correct answer type.  
Each question carries THREE marks.
- ☞ Students are not allowed to use any Mathematical and Physical tables (OR) any other electronic devices.
- ☞ After completion of the examination hand over the OMR answer sheet to the invigilator without fail. You can retain the question paper with you.
- ☞ Students should not leave the examination hall before the last bell rings.
- ☞ To know your results log in to our website [www.simsolympiads.com](http://www.simsolympiads.com).
- ☞ Stage-I branch result copy will be sent to the school mail id. Please contact your principal to know your result.

**Single Correct Answer Type :****7 × 3 = 21**

- A wire has a resistance  $R$ . What will be its resistance if its stretched to double its length ?  
1)  $R$                       2)  $2R$                       3)  $3R$                       4)  $4R$
- The strength of the magnetic field at a distance ' $r$ ' near a long straight current carrying wire is  $B$ . The field at a distance  $r/2$  will be  
1)  $B/2$                       2)  $B/4$                       3)  $2B$                       4)  $4B$
- Ayush has connected 3 cells of  $2V$  each to form a battery of  $6V$ . Which arrangement made by him is correct?



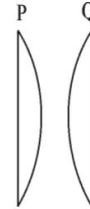
- Figure (a) is correct                      2) Figure (c) is correct
- Figure (b) is correct                      4) Figure (d) is correct

- The below mentioned symbol is



- Resistance                      2) Rheostat                      3) Variable resistance                      4) All of these
- The space in between the lenses P and Q in combination is filled with water. What will happen to its power and focal length?

- Power increases, focal length decreases
- Power decreases, focal length increases
- Both power and focal length decreases
- No change will take place in the image



- The essential difference between A.C. generator and a D.C. generator is \_\_\_\_

- AC generator will generate high voltage
- AC generator has slip rings while DC generator has a commutator
- DC generator will generate higher voltage.
- AC generator has a electromagnet while DC generator has a permanent magnet

- An electric heater draws a current of  $5A$  and its element has a resistance of  $50\Omega$ . If the heater is switched on for 5 minutes, calculate the energy released by the heater in kilo joules.

- $350 \text{ kJ}$                       2)  $375 \text{ kJ}$                       3)  $400 \text{ kJ}$                       4)  $425 \text{ kJ}$

**Multi Correct Answer Type :****3 × 3 = 9M**

- A person can spend Rs. 9.00 per month ( 30 days ) on electric light. If power is 30 paise per kWh and he use 5 identical bulbs for 5 hours a day then

- The power of each bulb is  $30 \text{ W}$                       2) The total number of units consumed are 30
- The power of each bulb is  $40 \text{ W}$                       4) The total number of units consumed are 40

**9. Find the correct discoveries made by the scientists.**

- 1) Michael Faraday - Direction of force experienced by a current conductor placed in magnetic
- 2) Fleming - Electromagnetic induction
- 3) Maxwell - Direction of magnetic lines of force due to straight conductor
- 4) H.C. Oersted - Electromagnetism

**10. Sound and light waves are going from air to oil. Which of the following are wrong**

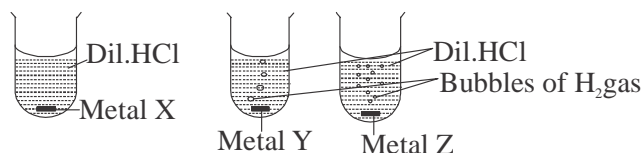
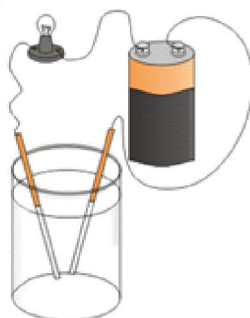
- 1) Light and sound both bend away from the normal
- 2) Light and sound both bend towards the normal
- 3) Light bends towards the normal but sound away from it
- 4) Light bends away from the normal but sound towards it

**Single Correct Answer Type :****7 × 3 = 21M****11. If a few drops of a concentrated acid accidentally spill over the hand of a student, what should be done?**

- 1) Wash the hand with saline solution
- 2) Wash the hand immediately with plenty of water and apply a paste of sodium hydrogen carbonate
- 3) After washing hand with plenty of water, apply solution of sodium hydroxide on the hand
- 4) Neutralise the acid with a strong alkali

**12. The given diagrams show the reactions of dilute hydrochloric acid with three different metals X, Y and Z. What are the metals X, Y and Z?**

- | X            | Y         | Z         |
|--------------|-----------|-----------|
| 1) Magnesium | Silver    | Iron      |
| 2) Silver    | Iron      | Magnesium |
| 3) Magnesium | Iron      | Silver    |
| 4) Iron      | Magnesium | Silver    |

**13. The solution of one of the following compounds will not conduct electricity, This compound is:**

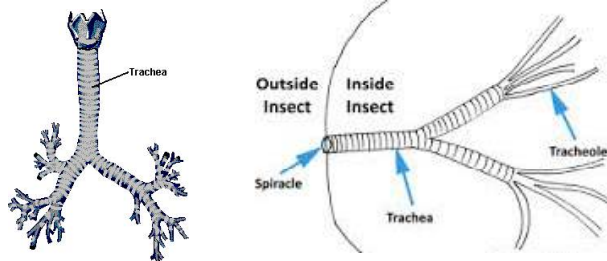
- |         |                     |                      |                      |
|---------|---------------------|----------------------|----------------------|
| a) NaCl | b) CCl <sub>4</sub> | c) MgCl <sub>2</sub> | d) CaCl <sub>2</sub> |
| 1) a    | 2) b                | 3) c                 | 4) d                 |



**Single Correct Answer Type :**

**10 × 3 = 30M**

**21. Common features of Human and Insect Tracheae is**



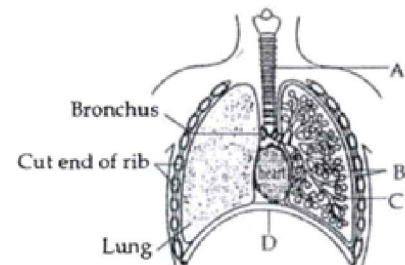
- 1) Non collapsible wall
- 2) Supporting rings
- 3) Ectodermal origin
- 4) Endodermal origin

**22. Select the correct sequence of following hormones that are involved in reabsorption of water, Na<sup>+</sup> ions and Ca<sup>++</sup> ions in nephron is**

- 1) Parathormone → ADH → Aldosterone
- 2) Vasopressin → Oxytocin → Parathormone
- 3) Parathormone → Vasopressin → Califerol
- 4) Vasopressin → Aldosterone → Parathormone

**23. Figure shows schematic plam of blood circulation in humans with labels A to D**

**Identify the label with its correct function / characteristic.**



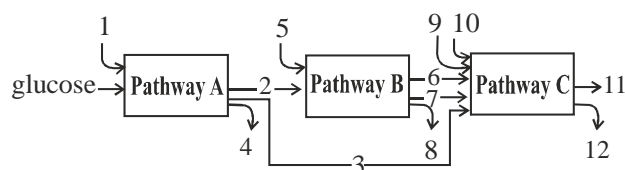
- 1) B – Pulmonary artery – takes blood from heart to lungs.
- 2) C – Venacava – Takes blood from Heart to body parts.
- 3) D – Dorsal Aorta – takes blood from heart to body parts.
- 4) A – Pulmonary vein – takes impure blood from body parts.

**24. Which of the following statements are correct?**

- i) Tape worms are hermaphrodites and undergo self fertilization.
- ii) Earthworms are hermaphrodites and undergo self fertilization.
- iii) Tape worms are hermaphrodites and undergo cross fertilization.
- iv) Earthworms are hermaphrodites and undergo cross fertilization.

- 1) (i) & (ii) only
- 2) (ii) & (iii) only
- 3) (iii) & (iv) only
- 4) (i) & (iv) only

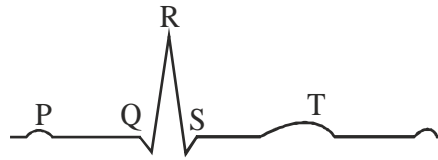
**25. The three boxes in this diagram represents the ‘Three major Biosynthetic Pathways’ in AEROBIC RESPIRATION. Arrows represent net reactants or products.**



**Arrows numbered - 4 , 8 and 12 represent, which of the following :**

- 1) NADH
- 2) ATP
- 3) H<sub>2</sub>O
- 4) FAD<sup>+</sup> or FADH<sub>2</sub>

26. The diagram given here is the standard ECG of a normal person, the P - Wave represents the :

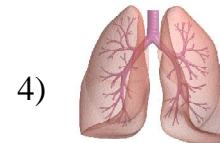
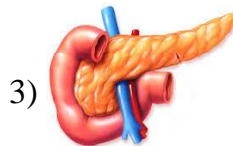
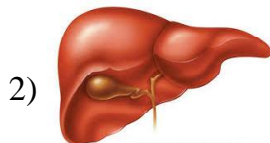
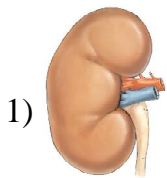


- 1) Initiation of the 'Ventricular contraction'.
- 2) Beginning of the 'Systole'.
- 3) End of 'Systole'.
- 4) Contraction of both the 'Atria'.

27. Which is the correct sequence of the components of a Reflex are?

- 1) Receptors → muscles → Sensory neuron → motor neuron → spinal cord.
- 2) Receptors → motor neuron → spinal cord → sensory neuron → muscles.
- 3) Receptors → spinal cord → sensory neuron → motor neuron → muscles.
- 4) Receptors → sensory neuron → spinal cord → motor neuron → muscles.

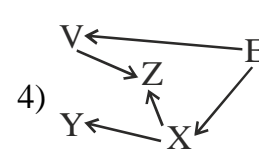
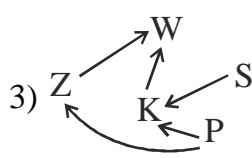
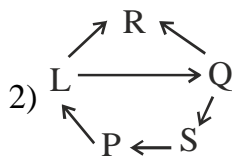
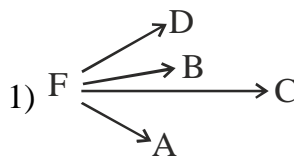
28. Islets of Langerhans are present in :



29. Energy pyramids of an ecosystem tend to diminish at higher tropic levels. Which of the following reasons explain the given statement?

- 1) The organisms become smaller.
- 2) Energy is stored and therefore, Less passed on to next level.
- 3) Energy is concentrated in fewer and large organisms.
- 4) Energy is being lost from one level to the next.

30. Study the food webs given below carefully which of the following food webs contain an omnivore?



❖❖❖ ALL THE BEST ❖❖❖