



# PHYSICS

## BOOKS - FULL MARKS PHYSICS (TAMIL ENGLISH)

### SAMPLE PAPER 04 (SOLVED)

#### Part I

1. Inertia of the body depends on

A. weight of the object

B. acceleration due to gravity of the planet

C. mass of the object

D. both a and b

**Answer:**



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**2. Magnification of a convex lens is**

A. Positive

B. Negative

C. either positive or negative

D. zero

**Answer:**



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**3.** When a sound wave travels through air, the air particles .....

- A. vibrate along the direction of the wave motion
- B. vibrate but not in any fixed direction
- C. vibrate perpendicular to the direction of the wave motion
- D. do not vibrate

**Answer:**



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4. The number of neutrons in  ${}_8O^{16}$  is \_\_\_\_\_

A. 8

B. 16

C. 32

D. 24

**Answer:**



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5. Which of the following is a triatomic molecule ?

A. Glucose

B. Helium

C. Carbon-di-oxide

D. Hydrogen

**Answer:**



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6. Photolysis is a decomposition reaction caused by\_\_\_\_\_

A. heat

B. electricity

C. light

D. mechanical energy

**Answer:**



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7. Water which is absorbed by roots is transported to aerial parts of the plant through

A. phloem

B. epidermis

C. cortex

D. xylem

**Answer:**



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8. World 'No Tobacco Day ' is observed on

A. May 31st

B. april 22nd

C. june 6th

D. october 2nd

**Answer:**



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9. Oxygen is produced at what point during photosynthesis?

A. when ATP is converted to ADP

B. when  $CO_2$  is fixed

C. when  $H_2O$  is splitted

D. all of these

**Answer:**



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10. Name the phenomenon by which carbohydrates are oxidized to release ethyl alcohol.

A. Glycolysis

B. Kreb's cycle

C. Photosynthesis

D. Fermentation

**Answer:**



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11. Biogenetic law states that

- A. Ontogeny and phylogeny go tother
- B. Ontogeny recapitulates phylogeny
- C. Phylogeny recapitulates ontogeny
- D. There is no relationship between  
phylogeny and ontogeny

**Answer:**



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12. Where you will create category of blocks ?

A. Block palette

B. Block menu

C. Script area

D. Sprite

**Answer:**



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## 1. State Boyle's law.

A. When the temperature of a gas is kept constant, the volume of a fixed mass of gas is inversely proportional to its pressure.  $p \propto \frac{1}{V}$ .

B.

C.

D.

**Answer:**



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2. Differentiate mass and weight.



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3. Why are traffic signals red in colour?



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4. Define Volume percentage .





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5. Give any two example for heterodiatomic molecules .



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6. A beam of light is incident through the holes on side A and emerges out of the hole on the other face of the box as shown in the figure. Which of the following could be inside the box?

A. convex

B. concave

C. rectangular glass

D. prism

**Answer: A**



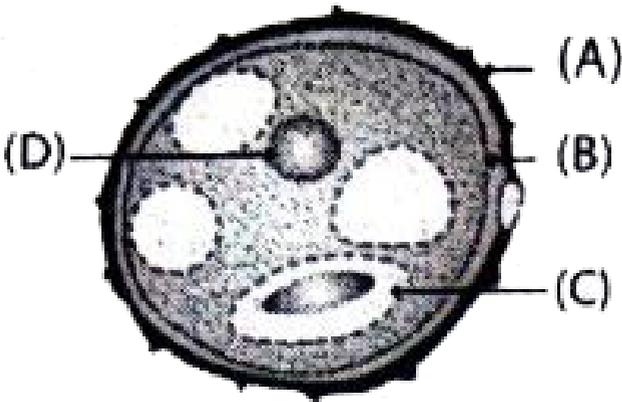
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7. Write the differences between endocrine and exocrine gland.



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8. Identify the parts A,B,C and D.



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9. Define cancer.

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10. The potential difference between two conductor is 110 V. How much work in moving 5 C charge from one conductor to the other ?



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## Part Iii

1. Describe the rocket propultion.



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2. Name and explain the type of scattering .



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3. Calculate the current and the resistance of a 100W, 200V electric bulb in an electric circuit.



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4. Explain the mechanism of cleansing action of soaps and detergents.



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5. (a) Explain the various types of binary solutions based on the physical states of solute and solvent table.

(b) State Henry's law?



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6. Give an example for conditioned reflexes.



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7. What causes the opening and closing of guard cells of stomata during transpiration?



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8. What is respiratory quotient?



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**9.** Why is a dietary restriction recommended for an obese individual ?



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**10.** How to identify saturated and unsaturated compounds ?



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1. Explain the construction and working of a 'Compound Microscope'.



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2. A heavy truck and bike are moving with the same kinetic energy . If the mass of the truck is four times that of the bike , then calculate the ratio of their momenta . (Ratio of momenta = 1:2)



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3. (i) A solution is prepared by dissolving 15g of NaCl in 85 g of water. Calculate the mass percentage of solute.

(ii) Calculate the  $p_H$  of 0.001 M NaOH.



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4. In what way hygroscopic substances differ from deliquescent substances .



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5. Light Reflection and Refraction . An object is placed at a distance of 0.25 m in front of a plane mirror. The distance between the object and image will be



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6. (i) Explain the male reproductive systems of rabbit?

(ii) What are vestigial organs?



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