



# PHYSICS

## BOOKS - FULL MARKS PHYSICS (TAMIL ENGLISH)

### SAMPLE PAPER - 16

Part I

1. Newton's laws are applicable in

A. for a body is at rest

B. for a body in motion

C. both (a) & (b)

D. only for bodies with equal masses

**Answer: A::B::C**



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2. Amount of light entering into the eye is controlled by \_\_\_\_\_.

A. retina

B. iris

C. pupil

D. medulla oblongata

**Answer: B**



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**3.** When sound travels from air to water, which parameter does not change?

A. Wavelength

B. Frequency

C. Velocity

D. Temperature

**Answer: B::C**



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4. 1 Mole of any substance contains \_\_\_\_\_  
molecules .

A.  $6.023 \times 10^{23}$

B.  $6.023 \times 10^{-23}$

C.  $3.0115 \times 10^{23}$

D.  $12.046 \times 10^{23}$

**Answer: A::B::C**



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5. Chemical formula for rust is .....



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6. The pH of a solution is 3. Its  $[OH^-]$  concentration is .....

A.  $1 \times 10^{-3} \text{ M}$

B. 3M

C.  $1 \times 10^{-11} \text{ M}$

D. 11M

**Answer: A::C**



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7. \_\_\_\_ are the largest of the leucocytes .

A. kidney

B. nephron

C. ganglion

D. nephridia

**Answer: A::D**



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8. \_\_\_\_ are the largest of the leucocytes .

A. Monocytes

B. Lymphocytes

C. Basophils

D. Neutrophils

**Answer: A::C**



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9. A person who met with an accident lost control of body temperature ,water balance and hunger.Which of the following part of brain is supposed to be damaged?

A. Medulla oblongata

B. Cerebrum

C. Pons

D. Hypothalamus

**Answer: A::D**



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10. The miracle rice which saved millions of lives and celebrated its 50th birthday is

A. IR8

B. IR24

C. Alomita 2

D. Ponni

**Answer: A**



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11. Study of fossils is known as .....

- A. fossilization
- B. Palaeontology
- C. Anatomy
- D. Embryology

**Answer: A::B**



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**12.** Down's syndrome is the genetic condition with 45 chromosomes.

A. 44

B. 45

C. 46

D. 47

**Answer: D**



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1. While catching a cricket ball the fielder lowers his hands backwards. Why?



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2. Differentiate convex lens and concave lens.



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3. State-the law of volume.



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4. The gram atomic mass of an element has no unit



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5. State two conditions necessary for rusting of iron.



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6. What is diastema?



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7. (i) Which hormone requires iodine for its formation ? What will happen if intake of iodine in our diet is low ?

(ii) What is the importance of rainwater harvesting ?

(iii) What is colosturm ? How is milk production hormonally regulated ?



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



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9. The degenerated wing of a Kiwi is an acquired character. Why is it an acquired



character?



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**10.** Calculate the number of moles present in 60 g of NaOH.



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**Part Iii**

1. State and prove the law of conservation of energy.



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2. Define Raman scattering.



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3. What is co-efficient of apparent expansion?



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4. State Avogadro's Hypothesis. and applications



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5. Explain the classification based on the direction of the reaction.



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**6. Classify neurons based on its structure.**



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**7. what is a neuron ?**



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**8. Describe the structure of Mitochondria.**



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9. What are the disadvantages of solar energy ?



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10. (i) A convex lens of power  $+6D$  and a concave lens of power  $-4D$  are combined together.

Find the power of the combination of two lenses.



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## Part Iv

1. Compare the properties of alpha, beta, and gamma radiations.



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2. Find the final temperature of a copper rod.

Whose area of cross section changes from

$10m^2$  to  $11m^2$  due to heating. The copper rod

is initially kept at 90K. (Coefficient of superficial expansion is 0.0021/K)



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3. Calculate the % of each element in calcium carbonate. (Atomic mass: C-12, O-16, Ca-40)



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4. explain solid solution ,Liquid solution and Gaseous solution .



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5. Natural selection is a driving force for evolution-How ?



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6. calculate the molar mass of the water.



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