



PHYSICS

BOOKS - FULL MARKS PHYSICS (TAMIL ENGLISH)

SAMPLE PAPER - 6

Part I

1. To produce a displacement _____ is required .

A. Acceleration

B. Force

C. velocity

D. Momentum

Answer: B



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2. Which of the following is correct

A. Rate of change of charge is electrical power

B. Rate of change of charge is current

C. Rate of change of energy is current

D. Rate of change of current is charge

Answer: B



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3. _____ aprons are used to protect us from gamma radiations

A. Lead oxide

B. Iron

C. Lead

D. Aluminium

Answer: C



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4. The gram molecular mass of oxygen molecules is _____/

A. 16g

B. 18 g

C. 32 g

D. 17 g

Answer: C



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5. when pressure is increased at constant temperature the solubility of gases in liquid _____.

A. No change

B. increases

C. Decreases

D. No reaction

Answer: B



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6. The normal pH of human blood is _____

A. 7.4

B. 0.74

C. 7.04

D. 70.4

Answer: A



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7. Active transport involves

A. movement of molecules from lower to higher concentration

B. expenditure of energy

C. it is an uphill task

D. All of the above

Answer: D



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8. Tobacco consumption is known to stimulate secretion of adrenaline. The component causing this could be

A. Nicotine

B. Tannic acid

C. Curcumin.

D. Leptin

Answer: A



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9. The segments of leech are known as

A. Metamerer

B. Proglottids

C. Strobila

D. Ganglion

Answer: A



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10. Vomiting centre is located in _____

A. Cerebrum

B. Cerebellum

C. Medulla oblongata

D. Hypothalamus

Answer: C



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11. Which one of the following is not true?

A. Vermiform appendix

B. Epiglottis

C. Nictitating membrane

D. Ear muscles

Answer: B



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12. Pusa komal is a disease resistant variety of ____

A. Cow pea

B. Sugarcane

C. Rice

D. Maize

Answer: A



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1. Define Raman scattering.



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2. How does an astronaut float in a space shuttle ?



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3. Differentiate convex lens and concave lens.



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4. State two conditions necessary for rusting of iron.



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5. Define combination reaction . Give one example for an exothermic combination

reaction .



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6. Which one is stress hormone



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7. Differentiate between Somatic cell gene therapy and Germline gene therapy.



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8. What is natural selection?



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9. What is heparin? What is its use?



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10. a. The refractive index of glass is 1.5. What is the speed of light in glass? (Speed of light in vacuum is $3.0 \times 10^8 \text{ m s}^{-1}$)

b. Is the speed of light in glass independent of the colour of light? If not, which of the two colours red and violet travels slower in a glass prism?



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Part iii

1. State the universal law of gravitation and derive its mathematical expression .



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2. What are the causes of 'Myopia' ?



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3. (a) State Joule's law of heating.

(b) an alloy of nickel and chromium is used as the heating element. Why ?

(c) How does a fuse wire protect electrical appliances ?



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4. Identify the bond between H and F in HF molecule.



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5. Methods of preventing corrosion



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6. What are the functions of the following?

(a) Thalamus

(b) Hypothalamus

(c) Cerebellum

(d) Pons



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7. Why is euploidy considered to be advantageous to both plants and animals?



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8. Write a short note on mesophyll.



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9. Mention the diseases caused by tobacco smoke.



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10. Write the characteristics of hydrocarbons .



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1. Explain the construction of simple microscope and derive its magnification power.



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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 number of water molecules present in one drop of water which weights 0.18 g.



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



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5. List the hormones of the anterior lobe of the pituitary gland?



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6. Why are leucocytes classified as granulocytes and agranulocytes? Name each cell and mention its functions.

White blood corpuscles or Leucocytes:

(ii) Biofortification may help in removing hidden hunger. How?



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