PHYSICS

BOOKS - SURA PHYSICS (TAMIL ENGLISH)

HALF YEARLY MODEL QUESTION PAPER

Mcqs

1. Which of the followingg lens would you prefer to use while reading small letters found inn a dictionary?

A. A convex lens of focal length 5 cm

B. A concave lens of focal length 5 cm

C. A convex lens of focal length 10 cm

D. A concave lens of focal length 10 cm

Answer:

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2. When will be the current flow in a circuit ?

A. A switch is closed

B. A switch is opened

C. Switch is either open or closed

D. None of the above

Answer:

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3. The sound waves are reflected from an obstacle into the same medium from which they were incident. Which of the following changes?

A. speed

B. frequency

C. wavelength

D. none of these

Answer:

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4. Energy generation in starts is due to _____.

A. chemical reaction

B. fission

C. fusion of light nuclei

D. fusion of heavy nuclei

Answer:

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5. 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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6. If a substance is heated or cooled, the linear expansion occurs along the axis is

A. X or -X

B. Y or -Y

C. both a and b

D. a or b

Answer:

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7. 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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8. Soil erosion can be prevented by

A. deforestation

B. afforestation

C. over growing

D. removal of vegetation

Answer:

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Subjective Questions

1. Distinguish between linear and areal or superficial expansion.

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2. Why does sound travel faster on a rainy day than on a dry day?

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3. What is rust ? Give the equation for formation of rust .

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4. A cricket ball of mass 25 g moving with a speed of 12 ms^{-1} is hit by a bat so that the ball is turned back with a velocity of $20ms^{-1}$. Calculate the impulse received by the ball?

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5. Define moment of a couple.

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6. (i) Differentiate convex lens and concave lens.

(ii) What is meant by heating?

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7. Define electric potential and potential difference.

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8. The ratio of masses of two planets is 2:3 and the ratio of their radii is 4:7 . Find the ratio of their acceleration due to gravity .

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9. (i) A metal rod 6.522 long at 285 k expands by 0.576 m at 363 k. find the coefficient of linear expansion of the metal.

(ii) How many electrons are passing per second in a circuit in which there is a current of 5A?

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10. When a ball of 0.5 kg mass moving with a speed of 20 ms^{-1} rebounds after striking

normally a ferfectly elastic wall. Find the change in momentum.

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11. What is Rayleigh's scattering?

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12. A metal rod 6.522 m long at 285K expands by 0.576 m at 363K. Find the coefficient of linear expansion of the metal.

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13. What is meant by Weightless?

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14. An athlete runs a certain distance before taking a long jump . Why ?

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15. Distinguish between linear and areal or superficial expansion.

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16. Why does sound travel faster on a rainy day than on a dry day?

Watch Video Solution

17. What is rust ? Give the equation for formation of rust .

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18. Lemon juice has a pH 2, what is the concentration of H^+ ions?

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19. How is ethanoic acid prepared from ethanol? Give the chemical equation.

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20. What are the structures involved in the protection of brain?

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21. What are psychotropic drugs ?

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22. How are e-wastes generated?

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23. A cricket ball of mass 25 g moving with a speed of 12 ms^{-1} is hit by a bat so that the ball is turned back with a velocity of $20ms^{-1}$. Calculate the impulse received by the ball?

Watch Video Solution

24. Define moment of a couple.

Watch Video Solution

25. (i) Differentiate convex lens and concave lens.

(ii) What is meant by heating?

Watch Video Solution

26. Define electric potential and potential difference.

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27. Calculate the number of molecules in 11 g of CO_2

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28. Write notes on

(i) Saturated solution.

(ii) Unsaturated solution.

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29. Define rate of reaction.

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30. A plant hormone was first discovered in Japan when rice plant were sufferring from Bakanae disease caused by Gibberella fujikoroi. Based on this information answer the following questions.

(i) Identify the hormone involved in this process.

(ii) Which property of this hormone causes the disease?

(iii) Give two functions of this hormone.

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31. A pure tall plant (TT)is crossed with pure dwarf plant (tt),What would be the F_1 and F_2 generations?Explain.

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32. Arun was playing in the garden. Suddenly he saw a dragon fly sitting on a plant. He observed the wings of it. He thought in looked similar to a wing of a crow. Is he correcct? Give reason for your answer.

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33. The ratio of masses of two planets is 2:3 and the ratio of their radii is 4:7 . Find the ratio of their acceleration due to gravity .


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34. (i) What are the concepts prepared by Galileo?

(ii) List any five properties of light.


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(ii) How many electrons are passing per second in a circuit in which there is a current of 5A?

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36. Explain the salient features of periods in the modern periodic table.

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37. (i) What is Transpiration? Give the importance of transpiration.

(ii) How do you differentiate homologous organs from analogous organs?

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38. Illustrate the structure and functions of brain.

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

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40. When a ball of 0.5 kg mass moving with a speed of 20 ms^{-1} rebounds after striking normally a ferfectly elastic wall. Find the change in momentum.

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41. What is Rayleigh's scattering?

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42. Write the different types of isotopes of oxygen and its percentage abundance .

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43. A solution is prepared by dissolving 45g of sugar in 180g of water. Calculate the mass percentage of solute.

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44. When an aqueous solution of potassium chloride is added to an aqueous solution of silver nitrate, a white precipitate is formed. Give the chemical equation of this reaction.

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45. What is a neurotransmitter?

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46. Why did Mendel select pea plant for this experiments?

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47. What are transgenic organisms?

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48. A metal rod 6.522 m long at 285K expands by 0.576 m at 363K. Find the coefficient of

linear expansion of the metal.

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49. What is meant by Weightless?

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50. Explain the construction of Simple Microscope.

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

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52. Write the differences between endocrine and exocrine gland.

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53. (i) Write a note on euploidy.

(ii) What would happen if the habitat of wild animals is disturbed?

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54. (i) What is metastasis?

(ii) Solar energy is renewable energy. How?

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55. At $10^{\circ}C$, how for away is a reflecting surface if you hear an echo in 0.274s? (speed of sound in air at $0^{\circ}C$ is $331.3ms^{-1}$).

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56. (i) State Joule's law off heating.

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

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

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57. How are magnetic ores separated from non magnetic impurities ? Explain .

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58. Write the characteristics of hydrocarbons .

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59. (i) What are the conditions which occur due to lack of ADH and insulin? How are the conditions different from one another?

(ii) Write the events involved in the sexual reproduction of a flowering plant. Discuss the first event and write the types.

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60. Eating junk food and consuming soft drinks results in health problems like obesity,

still children prefer. What are the suggestions you would give to avoid children eating junk food/consumption of soft drinks ?

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Mcq S

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4. Energy generation in starts is due to _____.

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B. fission

C. fusion of light nuclei

D. fusion of heavy nuclei

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5. Atoms of different elements with different atomic numbers, but same mass number are known as _____.

A. isobars

B. isotopes

C. isotones

D. isomers

Answer:

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6. The basis of modern periodic law is____

A. atomic number

B. atomic mass

C. isotopic mass

D. number of neutrons

Answer:

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7. 8% of NaCl solution is

A. 8g of NaCl in 100g of water

B. 8g of NaCl in 92g of water

C. 92g of NaCl in 8g of water

D. 92g of NaCl in 100g of water

Answer:

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8. Which of the following pairs can be the successive members of a homologous series ?

A. C_3H_8 and C_4H_{10}

B. C_2H_2 and C_2H_4

C. CH_4 and C_3H_6

D. C_2H_5OH and C_4H_8OH

Answer:

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9. Mammals are _____ animals

A. Cold blooded

B. Warm blooded

C. Poikilothermic

D. all the above

Answer:

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10. _____ is the longest cell in our body

A. Neuron

B. Neuroglia

C. Nerve fibres

D. Cyton

Answer:

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11. The essential parts of a flower are _____.

A. Calyx and Corolla

B. Calyx and Androecium

C. Corolla and Gynoecium

D. Androecium and Gynoecium

Answer:

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12. _____ help reduce blood sugar levels.

A. Sweety potato

B. Tomato

C. Beet root

D. Cane sugar

Answer:

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13. 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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14. The eye defect 'presbyopia ' can be corrected by

A. convex lens

B. concave lens

C. convex mirror

D. Bi focal lenses

Answer:

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15. If a substance is heated or cooled, the linear expansion occurs along the axis is

A. X or -X

B. Y or -Y

C. both a and b

D. a or b

Answer:

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16. 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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17. The Volume occupied by 4.4 g of CO_2 at S.T.P

A. 22.4 litre

B. 2.24 litre

C. 0.24 litre

D. 0.1 litre

Answer:

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18. In the alumino thermic process, the role of Al is _____

A. oxidizing agent

B. reducing agent

C. hydrogenating agent

D. sulphurising agent

Answer:

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19. A solution in which no more solute can be dissolved in a definite amout of solvent at a given termperature is called _____

A. Saturated solution

B. Unsaturated solution

C. Super saturated solution

D. Dilute solution

Answer:

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20. Rectified spirit is an aqueous solution which contains about _____ of ethanol .

A. $95.5\ \%$

B. $75.5\ \%$

C. $55.5\ \%$

D. $45.5\ \%$

Answer:

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21. Which of the following has the smallest mass?

A. 6.023×10^{23} atoms of He

B. 1 atom of He

C. 2g of He

D. 1 mole atoms of He

Answer:

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22. Syngamy results in the formation of _____.

A. Zoospores

B. Conidia

C. Zygote

D. Chlamydospores

Answer:

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23. Which of the following is used to produce product useful to humans by biotechnology techniques ?

A. enzyme from organism

B. live organism

C. vitamins

D. both a and b

Answer:

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24. Soil erosion can be prevented by

A. deforestation

B. afforestation

C. over growing

D. removal of vegetation

Answer:

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