



BIOLOGY

BOOKS - SURA BIOLOGY (TAMIL ENGLISH)

QUARTERLY MODEL QUESTION PAPER

Mcqs

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 & b

Answer:



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2. Where should an object be placed so that a real and inverted image of same size is obtained by a convex lens.

A. f

B. $2f$

C. infinity

D. between f and $2f$

Answer:



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3. 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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4. Kilowatt hour is the unit of

A. resistivity

B. conductivity

C. electrical energy

D. electrical power

Answer:



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5. If a sound wave travels with a frequency of $1.25 \times 10^4 \text{ Hz}$ at 344 m s^{-1} , the wave length will be

A. 27.52m

B. 275.2m

C. 0.02752m

D. 2.752m

Answer:



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6. Gamma radiations are dangerous because

_____.

A. it affect eyes & bones

B. it affects tissues

C. it produces genetic disorder

D. it produces enormous amount of heat

Answer:



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7. The Volume occupied by 1 mole of a diatomic gas at S.T.P is _____.

A. 11.2 litre

B. 5.6 litre

C. 22.4 litre

D. 44.8 litre

Answer:



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8. Which of the following have inert gases 2 electrons in the outermost shell ?

A. He

B. Ne

C. Ar

D. Kr

Answer:



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9. Deliquescence is due to _____

A. Strong affinity to water

B. Less affinity to water

C. Strong hatred to water

D. Inertness to water

Answer:



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10. Powdered $CaCO_3$ reacts more rapidly than flaky $CaCO_3$ because of _____.

A. large surface area

B. high pressure

C. high concentration

D. high temperature

Answer:



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11. TFM in soaps represents _____ content in soap .

A. mineral

B. vitamin

C. fatty acid

D. carbohydrate

Answer:



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12. Which is formed during anaerobic respiration

A. Carbohydrate

B. Ethyl alcohol

C. Acetyl CoA

D. Pyruvate

Answer:



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13. According to Mendel, alleles have the following character

A. Pair of genes

B. Responsible for character

C. Production of gametes

D. Recessive factors

Answer:



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14. Asexual reproduction takes place through budding in _____.

A. Amoeba

B. Yeast

C. Plasmodium

D. Bacteria

Answer:



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15. Which one of the following hormones is naturally not found in plants:

A. 2,4-D

B. GA3

C. Gibberellin

D. IAA

Answer:



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16. Dendrites transmit impulse _____ cell body
and axon transmit impulse _____ cell body.

A. away from, away from

B. towards, away from

C. towards, towards

D. away from, towards

Answer:



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17. Which of the following process requires energy ?

A. Acting transport

B. diffusion

C. osmosis

D. all of them

Answer:



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18. Mammals are _____ animals

A. Cold blooded

B. warm blooded

C. Poikilothermic

D. all the above

Answer:



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19. Kreb's cycle takes place in

A. chloroplast

B. mitochondrial matrix

C. stomata

D. inner mitochondrial membrane

Answer:



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20. A 25 % alcohol solution means

A. 25 ml alcohol in 100 ml of water

B. 25 ml alcohol in 25 ml of water

C. 25 ml alcohol in 75 ml of water

D. 75 ml alcohol in 25 ml of water

Answer:



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21. Which of the following have inert gases 2 electrons in the outermost shell?

A. He

B. Ne

C. Ar

D. Kr

Answer:



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22. 1 Mole of any substance contains _____
molecules .

A. 6.023×10^{23}

B. 6.023×10^{-23}

C. 3.0115×10^{23}

D. 12.046×10^{23}

Answer:



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23. In a simple circuit, why does the bulb glow when you close the switch ?

- A. The switch produces electricity
- B. closing the switch completes the circuit
- C. closing the switch breaks the circuit
- D. The bulb is getting charged

Answer:



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24. 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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Subjective Questions

1. If a 5N and a 15 N forces are acting opposite to one another . Find the resultant force and the direction of action of the resultant force



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2. What is dispersion?



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



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4. True or false. If false give the correct statement:

(i) Thermal energy always flows from a system

at higher temperature to a system at lower temperature.

(ii) For a given heat in liquid, the percentage apparent expansion is more than that of real expansion.



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5. Draw diagrams to represent the types of concentric vascular bundles.



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6. (a) Site of protein synthesis in a cyton ____.

(b) Membranes covering the brain.



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7. What are chemical messengers?



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8. What are allosomes?



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9. A cricket ball of mass 100 g moving with a speed of 20 ms^{-1} is brought to rest by a player . Find the change in momentum of ball.



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10. Differentiate mass and weight.



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11. Draw a ray diagram to show the image formed by a convex lens when the object is placed between F and $2F$.



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12. Distinguish between linear and areal or superficial expansion.



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13. Distinguish between cation and an anion .



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14. Vinu dissolves 50 g of sugar in 250 ml of hot water, sarath dissolves 50g of same sugar in 250 ml of cold water. Who will get faster dissolution of sugar? And why?



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15. Describe the structure of the human ovum with a neat labelled diagram.



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16. On analysing an impure sample of sodium chloride, the percentage of chloride was found to be 45.5 what is the percentage of pure sodium chloride in the sample?



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17. Name the components of nervous system.



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18. Draw a diagram to show spore formation in Rhizopus.



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19. A cricket ball of mass 25 g moving with a speed of 12 m s^{-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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20. (i) Differentiate convex lens and concave lens.

(ii) Why does the sky appear in blue colour?



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21. An electric iron consumes energy at the rate of 420 W when heating is at the maximum rate and 180 W when heating is at the minimum rate. The applied voltage is 220V. What is the current in each case.



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22. (i) Calculate the % of each element in calcium carbonate.

(ii) Give the applications of Avogadro's hypothesis.



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23. (i) Metal A belongs to period 3 and group 13. A in red hot condition reacts with steam to form B. A with strong alkali forms C > find A, B and C with reactions.

(ii) How does developig embryo gets its nourishment inside the mother's body?



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24. (i) What are the structures involved in the protection of brain?

(ii) List out the parasitic adaptation in leech.



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25. (i) How are chromosomes classified based on the position of centromere?

(ii) Why should the light dependent reaction occur before the light independent reaction?



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



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27. State Snell's law.



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28. Find the percentage of nitrogen in ammonia.



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29. True or false. If false give the correct statement:

(i) Ionic radius increases across the period from left to right.

(ii) An alloy is a heterogenous mixture of metals.





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30. Draw and label the structure of oxysomes.



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31. (a) How does leech respire?

(b) What does CNS stand for?



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32. What is the role of parathorone?



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33. What are Okazaki fragments?



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34. What is the resistance of heating element of the heater when 20 A current passing through it at a potential of 220 V ?



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35. State the principle of moments .



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36. What are the causes of Myopia?



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37. Distinguish real and ideal gases.



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38. State two conditions necessary for rusting of iron.



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39. Will the cool drinks give more fizz at top of the hills or at the foot ? Explain .



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40. Draw the dorsal view of brain of rabbit & label the parts.



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41. Under which conditions does the law of independent assortment hold good and why?



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42. Voluntary and involuntary actions.





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43. Draw a Gynoecium and label the parts.



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



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45. (i) Differentiate the eye defects: Myopia and Hypermetropia.

(ii) List any five properties of light.



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46. A piece of wire of resistance 10 ohm is drawn out so that its length is increased to three times its original length. Calculate the new resistance.



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47. (i) Calculate the number of water molecule present in one drop of water which weighs 0.18 g.

(ii) Give the salient features of "Modern atomic theory".



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48. (i) Name the acid that renders aluminium passive. Why?

(ii) What are hygroscopic substances differ from deliquescent substances.



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49. (i) Describe the structure of spinal cord.

(ii) What are heart sounds? How are they produced?



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50. (i) The sex of the new born child is a matter of chance and neither of the parents may be considered responsible for it. What would be

the possible fusion of gametes to determine to sex of the child?

(ii) 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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