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Previous Year Paper

Biology - 2013



Match The Following

1. Match the items in Column A with that which is most appropriate in Column B. Rewrite the matching pair.

A. Testis	(i) Kidney
B. Poliomyelitis	(ii) Water vapour
C. Transpiration	(iii) Gonad
D. Transpiration	(iv) Salk's vaccine
E. Uriniferous tubule	(v) Calcium
H. Water droplet	(viii)

Answer



One Word Answers

2. Name the following:
The cell body of a nerve cell.

Answer

3. Name the following:
The waxy layer on the epidermis of the leaf meant to reduce transpiration.

Answer

4. Name the following:
(iii) A non-biodegradable pesticide.

Answer

5. Name the following:
The physical expression of genes in an individual.

Answer

6. Name the following:
Knot-like mass of blood capillaries inside the Bowman's capsule.

Answer

7. Given below is an example of certain structures and their special functional activities.

For example : Eye and vision.

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Neurotransmitters

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8. Given below is an example of certain structures and their special functional activities.
For example: Eye and vision.

On a similar pattern, complete the following:

Ureter [Answer](#)

9. Given below is an example of certain structures and their special functional activities.
For example: Eye and vision.

On a similar pattern, complete the following:

Placenta [Answer](#)

10. Give the biological/technical terms for the following:
(i) Chemicals found in the blood which act against antigens.

[Answer](#)

11. Give the biological/technical terms for the following:
A constituent which causes pollution.

[Answer](#)

12. Give the biological/technical terms for the following:
The onset of menstruation in a young girl.

[Answer](#)

13. Give the biological/technical terms for the following:
Structure which connects the placenta with the foetus

[Answer](#)

14. Give the biological/technical terms for the following:

The fluid present between the layers of meninges

[Answer](#)

15. Give the biological/technical terms for the following:
Permanently open structures seen on the bark of an old woody stem.

[Answer](#)

16. Give the biological/technical terms for the following:

The biological process which is the starting point of the food chain

[Answer](#)

17. The change in an organism resulting due to stimulus

[Answer](#)

18. Give the biological/technical terms for the following:

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A solution in which the relative concentration of water molecules and the solute on either side of the cell membrane is the same.

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Answer



Multiple Choice Questions

19. Choose the correct answer from the four options given below:

The cell component visible only during cell division is

- A. Mitochondria
- B. Chloroplast
- C. Chromosome
- D. Chromosome

Answer

20. Choose the correct answer from the four options given below:

Pulse wave is mainly caused by the

- A. Systole of atria
- B. Diastole of atria
- C. Systole of the left ventricle
- D. Systole of the left ventricle

Answer

21. Choose the correct answer from the four options given below:

The recessive gene is one which expresses itself in

- A. Heterozygous condition
- B. Homozygous condition
- C. F_2 generation
- D. F_2 generation

Answer

22. Choose the correct answer from the four options given below:

A gland which secretes both hormone and enzyme is the

- A. Pituitary
- B. Pancreas
- C. Thyroid
- D. Thyroid

Answer

23. Choose the correct answer from the four options given below:

The ventral root ganglion of the spinal cord contains cell bodies of the

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C. Intermediate neuron

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D. Intermediate neuron

Answer



Short Answer Type

24. Briefly explain the following Term:

Disinfectants. [Answer](#)

25. List any two major activities of the Red Cross.

[Answer](#)

26. Briefly explain the following terms:

Guttation

[Answer](#)

27. State the exact location of the following:

Chloroplast

[Answer](#)

28. State the exact location of the following:

Corpus callosum

[Answer](#)

29. State the exact location of the following:

Guard cells

[Answer](#)

30. State the exact location of the following:

Pulmonary semilunar valve

[Answer](#)

31. (c) Given below are six sets with four terms each. In each set, a term is an odd one and cannot be grouped in the same category to which the other three belong. Identify the odd one in each set and name the category to which the remaining three belong. The first one has been done as an example:

Example: Fructose, Sucrose, Glucose, Calcium

Odd term: Calcium

Category: Carbohydrates

Carbonic acid, acetic acid, benzoic acid, boric acid

[Answer](#)

32. (c) Given below are six sets with four terms each. In each set, a term is an odd one and cannot be grouped in the same category to which the other three belong. Identify the odd one in each set and name the category to which the remaining three belong. The first one has been done as an example:

Example: Fructose, Sucrose, Glucose, Calcium

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Category: Carbohydrates

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ii. Saliva, bile, sweat, tears

Answer

33. (c) Given below are six sets with four terms each. In each set, a term is an odd one and cannot be grouped in the same category to which the other three belong. Identify the odd one in each set and name the category to which the remaining three belong. The first one has been done as an example:

Example: Fructose, Sucrose, Glucose, Calcium

Odd term: Calcium

Category: Carbohydrates

(iii) Cretinism, myxoedema, simple goitre, acromegaly

Answer

34. (c) Given below are six sets with four terms each. In each set, a term is an odd one and cannot be grouped in the same category to which the other three belong. Identify the odd one in each set and name the category to which the remaining three belong. The first one has been done as an example:

Example: Fructose, Sucrose, Glucose, Calcium

Odd term: Calcium

Category: Carbohydrates

(v) Semicircular canals, cochlea, tympanum, utriculus

Answer

35. (c) Given below are six sets with four terms each. In each set, a term is an odd one and cannot be grouped in the same category to which the other three belong. Identify the odd one in each set and name the category to which the remaining three belong. The first one has been done as an example:

Example: Fructose, Sucrose, Glucose, Calcium

Odd term: Calcium

Category: Carbohydrates

Semicircular canals, cochlea, tympanum, utriculus

Answer

36. Given below are five groups of terms. In each group, arrange and rewrite the terms in the correct order so as to be in a logical sequence. For example,

Question: Implantation, Parturition, Ovulation, Gestation, Fertilisation.

[Answer](#)

37. Given below are five groups of terms. In each group, arrange and rewrite the terms in the correct order so as to be in a logical sequence. For example,

Question: Implantation, Parturition, Ovulation, Gestation, Fertilisation.

Answer: Ovulation, Fertilisation. Implantation. Gestation, Parturition.

[Answer](#)

38. Given below are five groups of terms. In each group, arrange and rewrite the terms in the correct order so as to be in a logical sequence.

For example,

Question: Implantation, Parturition, Ovulation, Gestation, Fertilisation.

Answer: Ovulation, Fertilisation. Implantation. Gestation, Parturition.

Endodermis, Cortex. Soli water, Xylem, Root hair

[Answer](#)

39. Given below are five groups of terms. In each group, arrange and rewrite the terms in the correct order so as to be in a logical sequence.

For example, Question: Implantation, Parturition, Ovulation, Gestation, Fertilisation. Answer: Ovulation, Fertilisation. Implantation. Gestation, Parturition.

Metaphase, Telophase, Prophase, Anaphase, Cytokinesis

[Answer](#)

40. Given below are five groups of terms. In each group, arrange and rewrite the terms in the correct order so as to be in a logical sequence.

For example, Question: Implantation, Parturition, Ovulation, Gestation, Fertilisation. Answer: Ovulation, Fertilisation. Implantation. Gestation, parturition.

Intestine, Liver, Intestinal artery, Hepatic vein. Hepatic portal vein

[Answer](#)

41. Briefly explain the following terms.

Genes [Answer](#)

42. Briefly explain the following terms:

Cytokinesis in plant cells

[Answer](#)

43. Briefly explain the following terms:

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[Answer](#)

44. Differentiate between the following pairs on the basis of what is mentioned within brackets:
-

Photolysis and Photophosphorylation (definition)

[Answer](#)

45. Differentiate between the following pairs on the basis of what is mentioned within brackets:
Bicuspid valve and Tricuspid valve (function)

[Answer](#)

46. Differentiate between the following pairs on the basis of what is mentioned within brackets:

Vasectomy and Tubectomy (explain)

[Answer](#)

47. Differentiate between the following pairs on the basis of what is mentioned within brackets:

Cerebrum and Spinal cord (arrangement of nerve cells)

[Answer](#)

48. Differentiate between the following pairs on the basis of what is mentioned within brackets:
(v) Bowman's capsule and Malpighian capsule (parts included)

[Answer](#)

49. Give biological reasons for the following:

The wall of the ventricle is thicker than the auricle.

[Answer](#)

50. Give biological reasons for the following:

The renal cortex has a dotted appearance.

[Answer](#)

51. Give biological reasons for the following:

Wooden frames of doors get jammed during the monsoon season.

[Answer](#)

52. Give biological reasons for the following:

Throat infections can lead to ear infections.

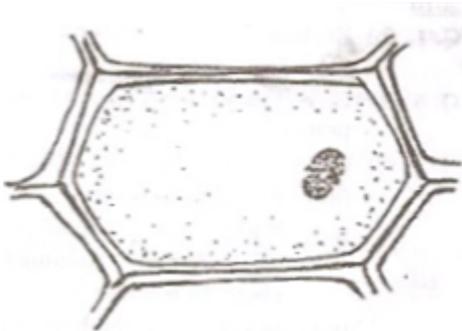
[Answer](#)

53. Give biological reasons for the following:

The hand automatically shows the direction to turn a cycle without thinking.

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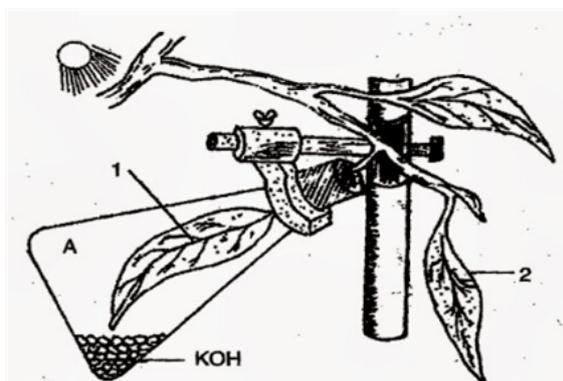
54. a. The figure given below shows the epidermal cells of an onion bulb. This cell was then transferred to a drop of a sugar solution.



- i. Draw a well labelled diagram of the epidermal cell as it would appear after immersion in a strong sugar solution.
- ii. what is the scientific term is used for the changes as shown in (i) above?
- iii. What should be done to restore the cell back to its original condition?
- iv. Give the scientific term for the recovery of the cell as a result of the step taken in (iii) above
- v. Define the term osmosis.

Answer

55. The figure given below represents an experiment to demonstrate a particular aspect of photosynthesis. The alphabet 'A' represents a certain condition inside the flask



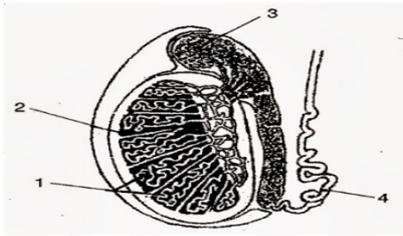
- i. What is the aim of the experiment?
- ii. Identify the special condition inside the flask.
- iii Name an alternative chemical which can be used instead of KOH
- iv In what manner do the leaves 1 and 2 differ at the end of the starch test?

Answer

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answer the questions which follow:

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- Label the parts numbered 1 to 4 in the diagram.
- State the functions of the parts labelled 1 and 3.
- What is the significance of the testes being located in the scrotal sac outside the abdomen?
- What is the role played by the inguinal canal?
- What is semen?

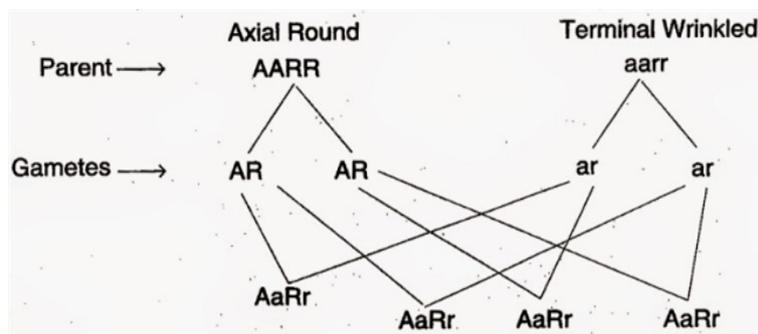
Answer

57. Draw a diagram of the human eye as seen in a vertical section and label the parts which suit the following descriptions relating to the
- Photosensitive layer of the eye.
 - Structure which is responsible for holding the eye lens in its position.
 - Structure which maintains the shape of the eye ball and the area of no vision.

- Anterior chamber seen in front of the eye lens.
- Outer most transparent layer seen in front of the eye ball.

Answer

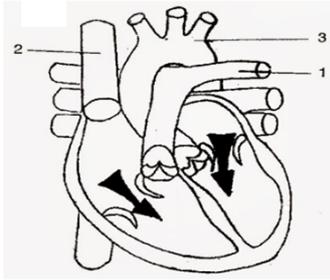
58. Given below is a schematic diagram showing Mendel's experiment on sweet pea plants having axial flowers with round seeds (AARR) and terminal flowers with wrinkled seeds (aarr). Study the same and answer the questions which follow:



- Give the phenotype of F1 progeny.
- Give the phenotypes of F2 progeny produced upon by the self-pollination of F1 progeny.
- Give the phenotypic ratio of F2 progeny.

(iv) Name and explain the law induced by Mendel on the basis of the above
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59. The diagram given below represents the human heart in one phase of its functional activities. Study the same and answer the questions which follow.



- (i) Name the phase.
(ii) Label the parts 1, 2 and 3.
(iii) Which part of the heart is contracting in this phase? Give a reason to support your answer.
(iv) Draw a well-labeled diagram of part 1 and 2 to show the structural differences between them.

Answer