

The correct answer is filaments, which is lettered [D]

[A] [B] [C]

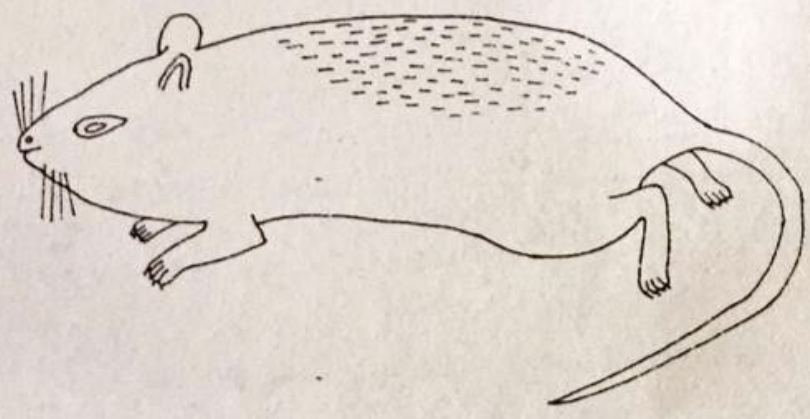
Think carefully before you shade the answer spaces; erase completely any answer(s) you wish to change.

Do all rough work on this question paper.

Now answer the following questions.

1. Animals that can vary their body temperature in response to changes in their environments are
- A. poikilothermic.
 - B. homoiothermic.
 - C. diploblastic.
 - D. triploblastic.

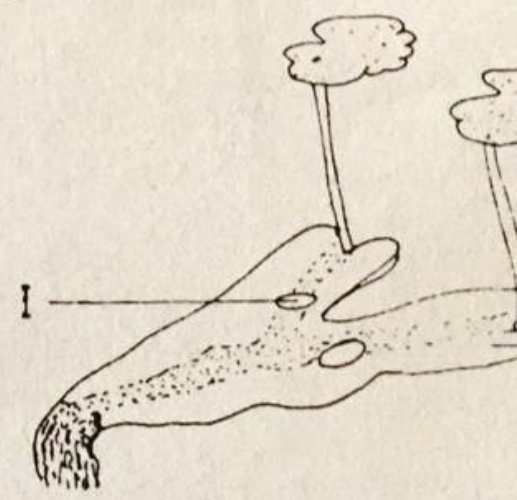
The diagram below is an illustration of the drawing of a mammal by a student. Use it to answer question 2.



2. The type of view of the drawing is
- A. posterior.
 - B. ventral.
 - C. anterior.
 - D. lateral.

3. Prokaryotes belong to the Kingdom
- A. Animalia.
 - B. Protista.
 - C. Fungi.
 - D. Monera.

The diagram below is an illustration of a member of a Class in the Division. Study it and answer questions 4 to 6.



4. The organism illustrated belongs to the Class
- A. Musci.
 - B. Pteridopsida.
 - C. Hepaticae.
 - D. Dicotyledoneae.

- 5. The part labelled **I** is the
 - A. sporophyte.
 - B. apical notch.
 - C. rhizoid.
 - D. gemma cup.
- 6. The **main** function of the part labelled **II** is
 - A. for asexual reproduction.
 - B. production of multicellular reproductive bodies.
 - C. for absorption of light during photosynthesis.
 - D. to reduce transpiration from its body tissues.
- 7. During photosynthesis in green plants, the formation of *ATP* occurs in the
 - A. epidermis.
 - B. xylem.
 - C. bark.
 - D. chloroplast.

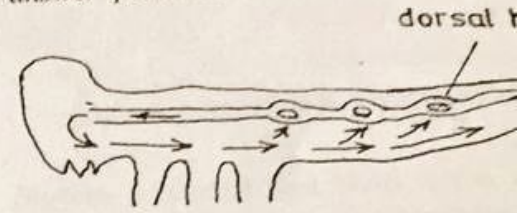
The information below is on the stages of conjugation in *Spirogyra*. Use it to answer questions 8 to 10.

- I** - Conjugation tube is formed
- II** - Protuberances from **each** cell go to meet **each** other
- III** - **Two** filaments lie side by side
- IV** - The male gamete passes through the conjugation tube into the opposite cell to form a zygote

- 8. The **correct** sequence of conjugation in *Spirogyra* is
 - A. **I** → **II** → **III** → **IV**.
 - B. **II** → **III** → **IV** → **I**.
 - C. **III** → **II** → **I** → **IV**.
 - D. **IV** → **I** → **II** → **III**.
- 9. The biological importance of **II** is that it
 - A. is where the zygote is formed.
 - B. is where the male gamete is formed.
 - C. protects the gamete.
 - D. forms the conjugation tube.

- 10. Conjugation also takes place in
 - A. *Amoeba*.
 - B. *Paramecium*.
 - C. virus.
 - D. yeast.
- 11. Which of the following vertebrae has vertebral canal?
 - A. Atlas
 - B. Thoracic
 - C. Lumbar
 - D. Sacrum

The diagram below is an illustration of the transport system in an animal. Study it and answer questions 12 and 13.



- 12. The type of transport system illustrated is
 - A. closed circulatory system.
 - B. lymphatic system.
 - C. open circulatory system.
 - D. respiratory system.
- 13. The Class of animals that exhibit the illustrated transport system is
 - A. Amphibia.
 - B. Aves.
 - C. Insecta.
 - D. Reptilia.
- 14. The function of leucocytes is to
 - A. facilitate blood clotting.
 - B. engulf bacteria.
 - C. destroy lymph nodes.
 - D. transport oxygen.

Subtopic: ...

1. ...

2. ...

3. ...

4. ...

5. ...

15. The structure in insects that serve a similar function as the stoma in plants is
- spiracle.
 - lung.
 - mouth.
 - trochanter.
16. The cup-shaped part of the Bowman's capsule contains
- nephron.
 - loop of Henle.
 - nephridium.
 - glomerulus.
17. In hot weather, urine becomes
- more concentrated and lighter in colour.
 - more concentrated and darker in colour.
 - less concentrated and lighter in colour.
 - less concentrated and darker in colour.
18. A drunk driver could **not** drive in a straight manner because the alcohol affects the nervous system by
- making the driver over alert and hyperactive.
 - interfering with the action of the digestive system to produce more glucose.
 - improving the communication between the brain and other neurones.
 - causing blurry vision and reducing alertness.

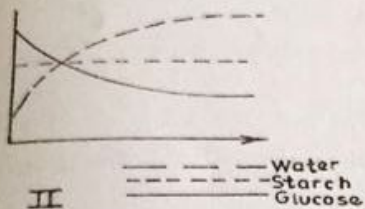
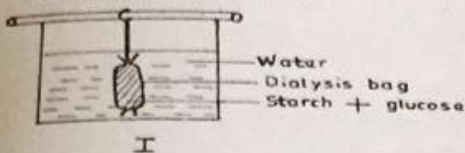
The diagram below is an illustration of a fruit.
Use it to answer questions 19 and 20.



19. The type of fruit is
- fleshy.
 - succulent.
 - indehiscent.
 - dehiscent.
20. The mechanism of seed dispersal illustrated in the diagram is
- water.
 - explosive.
 - wind.
 - animal.
21. In water culture experiments, the bottles are covered with black paper to prevent
- air from reaching the plant.
 - the lower part of the stems from photosynthesizing.
 - decomposition of the macro-elements.
 - algal growth in the solution.
22. The oxygen released during photosynthesis is obtained from the
- ionization of water.
 - excess oxygen taken into the plant.
 - breakdown of carbon (II) oxide.
 - breakdown of glucose.
23. The seedlings in a rice field were found to have reddish leaves with poor root development. This is because the soil lacks
- sulphur.
 - phosphorus.
 - potassium.
 - iron.
24. Excess sugar is stored in mammals as
- glycogen.
 - galactose.
 - starch.
 - sucrose.

25. The process by which fats are broken down into droplets for easy digestion is known as
- deamination.
 - assimilation.
 - emulsification.
 - absorption.

A solution of starch and glucose was put in a dialysis bag and suspended in a beaker of water in diagram I. Diagram II is a graph of the results from the experiment. Study them and answer questions 26 and 27.



26. Which of the following summaries best describes the amount of water, starch and glucose in the dialysis bag, over the course of the experiment?

	Water	Starch	Glucose
A.	Increases	Decreases	Unchanged
B.	Decreases	Unchanged	Increases
C.	Unchanged	Increases	Decreases
D.	Increases	Unchanged	Decreases

27. The aim of the experiment is to investigate how
- transpiration occurs in plants.
 - molecular sizes affect movement through permeable membranes.
 - semi-permeable membranes are functional.
 - water dissolves solutes.

28. *Rhizopus* is a saprophyte because it
- digests food extracellularly.
 - feeds on living organisms.
 - grows on trees.
 - manufactures its food.

29. Which of the following statements is likely to be an effect of the elimination of decomposers from an ecosystem?
- Concentration of carbon (IV) oxide will increase
 - Food webs would be more complicated
 - Refuse will accumulate overtime
 - Soil nutrients will increase

30. In which of the following aquatic habitats would there be the least salinity?
- Freshwater
 - Estuaries
 - Swamps
 - Marine

Study the food chains below and use them to answer questions 31 and 32.

- I: maize → man → grass → lion
 II: grass → grasshopper → lizard → hawk
 III: grass → zebra → monkey → lion
 IV: detritus → lion → antelope → grass

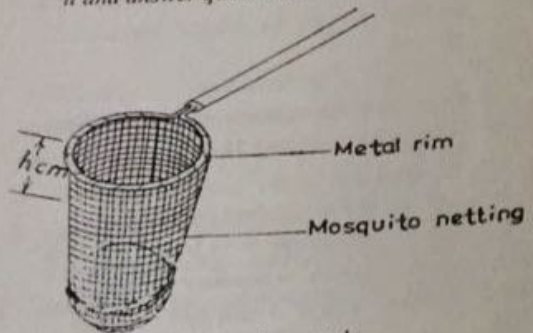
31. Which of the food chains are not correct?
- II and III only
 - III and IV only
 - I, III and IV only
 - II, III and IV only

32. Which of the following statements about food chain labelled IV is correct? The
- grass is the saprophyte
 - detritus is the producer
 - lion is correctly placed
 - arrows are wrongly placed

33. In an ecosystem, bacteria and fungi are regarded as
- producers.
 - scavengers.
 - predators.
 - decomposers.

34. Breathing roots are
- an adaptation for desert life.
 - an adaptation for swamps.
 - found in all aquatic plants.
 - found in epiphytes.

The diagram below is an illustration of an instrument used for ecological studies. Study it and answer questions 35 and 36.



35. The instrument is used to catch
- earthworms and ants.
 - caterpillars and frogs.
 - grasshoppers and butterflies.
 - earthworms and butterflies.
36. If the length of the collecting net is h cm, what would be the implication to its function?
- The organisms caught would escape easily
 - Swinging the instrument would be difficult
 - The instrument would trap the intended organism
 - It will make the handle inefficient

37. A farmer planted beans, maize and potatoes on the same piece of land. What type of interaction would likely occur on the farmland?
- Interspecific competition
 - Intraspecific competition
 - The farmland will be easily weathered
 - The nutrients on the farmland will easily be depleted

A company bought an expanse of land and cut down all the trees on it. Use the statements to answer questions 38 and 39.

38. The term used to describe the cutting down of trees on the land is
- afforestation.
 - deforestation.
 - reafforestation.
 - forestry.
39. What is the likely effect of the action on the environment?
- It will lead to a reduced effect of global warming
 - There will be growth of new species of organisms
 - There will be increased accumulation of oxygen gas
 - The area might be prone to flooding
40. Which of the following natural resources is formed from the remains of dead animals?
- Coal
 - Firewood
 - Iron ore
 - Fossil fuel
41. Which of the following statements about human blood groups is **not** correct?
- O is recessive
 - A is dominant over B
 - B is dominant over O
 - A and B are codominant

42. The types of fingerprint patterns in humans are
 A. whorl, alternate, opposite and compound.
 B. compound, loop, whorl and alternate.
 C. whorl, arch, compound and loop.
 D. arch, simple, compound and opposite.
43. An example of physiological variation is
 A. blood group.
 B. height of plant.
 C. skin colour.
 D. body size.
44. The sex of humans is determined by the inheritance of
 A. a pair of homologous chromosomes.
 B. X and Y chromosomes.
 C. an extra chromosome in males.
 D. a dominant gene.
45. Genes are found in the
 A. centriole.
 B. centrosome.
 C. chiasma.
 D. chromosome.

A man with blood group **A** marries a woman with blood group **B** and they have **two** children. The first child is blood group **O** while the second child is blood group **AB**. Use the information to answer questions 46 and 47.

46. Which of the following statements is **not** correct? The
 A. two children belong to the man if both parents are heterozygous.
 B. man can never have a child that has blood group **O**.
 C. second child only belongs to the man if both parents are homozygous.
 D. first child does not belong to the man if the man is homozygous.

47. If **both** parents are homozygous, the children would **likely** belong to blood group
 A. **AB**.
 B. **O**.
 C. **A**.
 D. **B**.

48. The evidence of evolution that paleontology is based on is
 A. fossils.
 B. vestigial organs.
 C. embryology.
 D. comparative biochemistry.

49. Which of the following evolutionary trends in plants is **correct**?
 A. Ferns → algae → mosses → seed plants
 B. Ferns → mosses → algae → seed plants
 C. Algae → mosses → ferns → seed plants
 D. Mosses → algae → ferns → seed plants

50. Which of the following processes provide material for evolution?
 A. Germline mutation
 B. Territoriality
 C. Nuptial flight
 D. Use and disuse of organs

END OF PAPER