



Digital Teachers

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NAME:..... STREAM.....

SENIOR SIX

P530/1

BIOLOGY

PAPER 1

EXAM 1

FOR CONSULTATION CALL 0776802709

INSTRUCTIONS TO CANDIDATES:

- *Answer all questions in both sections A and B*
- *Answers to Section A questions must be written in the boxes provided*
- *Answers to Section B should be written in spaces provided.*
- *No additional sheets of paper should be inserted in this booklet.*

FOR EXAMINERS USE ONLY

Section	Marks
A (1 – 40)	
B 41	
42	
43	
44	
45	
46	
Total	

SECTION.A

1. The relationship between cellulase – secreting bacteria and herbivorous mammals is an example of
 - A. Parasitism
 - B. Commensalism
 - C. Autotrophism
 - D. Mutualism

2. The transverse section of an unnamed plant was examined under a microscope and found to consist of an epidermis with poorly developed cuticle, a wide cortex with large intercellular air spaces. The un named plant is most likely a
 - A. Halophyte
 - B. Mesophyte
 - C. Xerophyte
 - D. Hydrophyte

3. Chloride ions are necessary for the proper functioning of salivary amylase enzyme chloride act as
 - A. prosthetic
 - B. activator
 - C. co-factor
 - D. co-enzyme

4. Self fertilization is prevented in ferns because
 - A. Archegonia matures first, then antheridia
 - B. antheridia matures first, then archegonia
 - C. both archegonia and antheridia of the same species have incompatible gametes.

D. The female reproductive organ is enclosed while the male one is not.

5. An enzyme which catalyses the conversion of a dipeptide into separate amino acids is an example of

A. dehydrogenase

B. hydrolase

C. decarboxylase

D. transferase

6. In which prophase stage are the chromosomes longer and thinner

A. zygotene

B. pachytene

C. leptotene

D. diplotene

7. When in Mitosis does spindle formation occur

A. anaphase

B. interphase

C. prophase

D. metaphase

8. Which of the following groups exhibit radial symmetry?

A. protozoa

2. Coelenterates

3. Annelids

4. Nematodes

A. all of them

B. 1, 2 and 3

- C. 1 and 4
- D. 2 only

9. A student of histology describes cells as prismatic with a height dimension being not greater than width, on the surface, they had a mosaic appearance . which of these is it likely to be

- A. squamous
- B. cuboidal
- C. transitional
- D. epithelial

10. The energy flow in the ecosystem is

- A. in two directions
- B. cyclic
- C. unidirectional
- D. multidirectional

11. Which one of the following describes the structure of an earth worm

- A. diploblastic coelomate
- B. triploblastic coelomate
- C. diploblastic acoelomate
- D. triploblastic acoelomate

12. Which of the following best describes how pesticides become dangerous today.

- A. they harden the soil
- B. they cause eutrophication in water and kill the fish
- C. they persist in the soil and make it infertile
- D. they pass through food chains in more concentrated forms

13. During Meiosis, crossing over occurs between one of the following

- A. two homologous chromosomes
- B. two homologous chromatids
- C. two non - homologous chromatids
- D. two centromeres of homologous chromatids

14. The exchange of gases during respiration is due to

- A. exosmosis
- B. active transport
- C. endosmosis
- D. diffusion

15. Glycolysis takes place in

- A. mitochondria
- B. granae
- C. endoplasmic reticulum
- D. cytoplasm

16. The enzymes for electron transport chain are present in

- A. cytoplasm
- B. inner mitochondrial membrane
- C. matrix
- D. outer mitochondrial membrane

17. In an electron transport chain, one molecule of NADH₂ yields

- A. 1ATP
- B. 2ATP
- C. 3ATP
- D. 1FADH₂

18. Which of the following materials has the highest amount of potential energy per unit weight

- A. monosaccharides
- B. proteins
- C. vitamins
- D. fats

19. Which of the following reversible changes occurs in both plants and animals

- A. carbohydrates $\xrightleftharpoons{\hspace{1cm}}$ fats
- B. Hexose sugars $\xrightleftharpoons{\hspace{1cm}}$ starch
- C. proteins $\xrightleftharpoons{\hspace{1cm}}$ carbohydrates and ammonium ions
- D. carbohydrates $\xrightleftharpoons{\hspace{1cm}}$ carbon dioxide and water vapour

20. Which of the following body organs would be lined with a ciliated pseudo stratified columnar epithelium

- A. nephrones
- B. ileum
- C. urinary bladder
- D. trachea

21. Which of the following is not a method of measuring the rate of respiration in an organism?

- A. estimating the amount of food taken in by an organism per day.
- B. measuring the heat produced by the organism in a given day
- C. measuring the amount of carbon dioxide produced by the organism in a given day.
- D. estimating the amount of oxygen consumed by the body in a given time

22. Which of the following features is not essential for gaseous exchange in lungs?

- A. Pleural fluid
- B. dense net work of capillaries
- C. thin epithelium

D. presence of moisture

23. Which one of the following glands is compound saccular?

A. mammary glands

B. sebaceous glands

C. sweat glands

D. gastric glands

24. Which of the following would be the immediate danger to a fish when taken out of water?.

A. drying out of gills

B. lack of oxygen around gills

C. reduced surface area for gaseous exchange

D. change in external temperature

25. Which of the following organelles is associated with the final stage of most cell secretions?

A. smooth endoplasmic reticulum

B. rough endoplasmic reticulum

C. ribosome

D. Golgi apparatus

26. Which of the following enzymes is adversely affected by high PH?

A. trypsin

B. pepsin

C. amylase

D. lipase

27. Which of the following symptoms is most likely to be caused by magnesium deficiency in plants?

A. yellow leaves and stunted growth

B. poor root growth

C. weak stems

D. yellow spotted leaves

28. Which one of the following methods is used by halophytes to conserve water?

A. shed leaves

B. store water

C. reduce number of stomata

D. have small leaves

29. Which one of the following substances consists of globular proteins?

A. enzymes

B. keratin

C. elastin

D. collagen

30. Organism X has the following characteristics

i) Body temperature = 29°C

ii) Number of limbs = 8

iii) Head and thorax are fused

iv) Feeds on dead animals

v) is nocturnal

Which one of the following combinations of characteristics would be useful in making a dichotomous key?

A. i), iv) and v)

B. i) and v)

C. ii) iii) and v)

D. ii) and iii)

31. Plant roots in association with symbiotic bacteria is an indication that

A. the plant is indication that

B. the roots have been attached

C. soil around roots lacks nitrogen

D. soil around roots lacks humus

32. Which one of the following blood conditions would cause least ventilation rate in humans

- A. low carbondioxide and high oxygen concentrations
- B. high carbondioxide and oxygen concentrations
- C. lo carbondioxide and oxygen concentrations
- D. high carbondioxide and oxygen concentrations

33. Which of the following is likely to happen to a dog fish which ahs damaged branchial values.

- A. water would not enter the mouth
- B. water would enter through the gill slits.
- C. water would get out through the mouth
- D. water would not enter the spiracles

34. In which one of the following parts of the cell does most production of ATP occur

- A. matrix of mitochondria
- B, cristae of mitochondria
- C. cytoplasm of cell
- D. outer membrane mitochondria

35. Which of the following describes the green house effect.

- A. depletion of the ozone layer increases atmospheric pollution
- B. the earth retains the heat it gains from the sun
- C. increasing atmospheric carbondioxide prevents heat loss from the earth surface
- D. the earth gives out carbondioxide which prevents light rays from the sun reaching the earth.

36. The reproductive stage of plasmodium in the liver is represented by the

- A. zygote
- B. gametocyte

- C. merozoite
- D. sporozoite

37. Which of the following are formed during anaerobic respiration in yeast cell.

- A. lactic acid and ATP
- B. lactic acid and ADP
- C. ethanol and ATP
- D. ethanol and ADP

38. Which of the following would not reduce the development of Graafian follicles in mammalian ovaries

- A. high levels of oestrogen
- B. high levels of progesterone
- C. deficiency in the pituitary gland
- D. low levels of the luteinising hormone

39. Which one of the following is an interacellular parasite

- A. trypanosome
- B. plasmodium
- C. schistosome
- D. hook worm

40. In which of the following situations would population growth occur? When the number of

- A. birth equals the number of death
- B. birth plus the number of immigrations
- C. birth plus the number of immigrations is greater than the number of death plus the number of emigrations
- D. death plus the number of emigrations is greater than the number of birth plus the number of immigration .

SECTION. B

41. The graph below shows the effect of sewage discharge on some chemical constituents of a river at increasing distances down stream from the point of sewage discharge.

a) Give explanation for the variation in concentration of ammonium ions and dissolved oxygen, down stream from the point of sewage discharge

i) Ammonium ions

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(03 marks)

ii) Dissolved oxygen

(03 marks)

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b) Describe the effects of the sewage on the ecosystem at distance X down stream. (04 marks)

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42. Giving examples, distinguish between photosynthetic and chemosynthetic bacteria.

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.....(03 marks)

b) Explain how certain bacteria which require light for photosynthesis survive under weeds in ponds and rocks. (07 marks)

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43.a) What problems may arise from excessive use of chemical to control plant and animal pests of crop plants. (03 marks)

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b) i) What is biological pest control. (01 mark)

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ii) Give any 2 risks that may arise as the result of biological pest control method. (02 marks)

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c) i) Explain how the release of chlorofluorocarbons (CFCs) into the atmosphere can damage the ecosystem. (02 marks)

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ii) What measures can be taken to minimize the problem in c) i) above. (02 marks)

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44.a) What are the differences between meiosis and mitosis.

Meiosis	mitosis

b) State the significance of meiosis to living organisms. (03 marks)

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45.a) What is meant by eutrophication. (04 marks)

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d) Effects of eutrophication are more severe in water bodies where the thermal pollution occurs.

Explain. (02 marks)

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46.a) Define the term sexual reproduction. (01 mark)

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b) Name any two hormones which initiate puberty in human beings. (02 marks)

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c) List any three secondary sexual characteristics of human males. (03 marks)

- i).....
- ii).....
- iii).....

d) Give four advantages and disadvantages of reproduction by seed. (04 marks)

Advantages

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Disadvantages

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END

GOOD LUCK