



Digital Teachers

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

SENIOR SIX

P530/1

BIOLOGY

PAPER 1

EXAM 7

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. Two types of nucleic acids occur in cells DNA and RNA where do you expect to get both nucleic acids in a cell
 A: Nucleoplasm
 B: on Ribosomes
 C: in the mitochondria
 D: In cell cytoplasm
2. Epistasis in general
 A: increases the number of phenotypic classes
 B: Reduces the number of phenotypic classes
 C: has no effect on phenotypic classes
 D: occurs in plants only
3. Glands with ducts are called
 A: Exocrine glands
 B: Apocrine glands
 C: Merocrine glands
 D: Endocrine glands
4. Enzyme specificity is defined by
 A: its protein nature
 B: its large molecular size
 C: its distinct surface configuration
 D: the configuration of coenzymes
5. Chromosome mutation involving acquisition of an entire haploid set is called
 A: non-disjunction
 B: polyploidy
 C: Aberration
 D: Aneuploidy
6. Termites are able to eat wood because they
 A: produce cellulose enzyme
 B: contain cellulose digesting bacteria in the gut
 C: possess strong mandibles
 D: contain fungi in the gut
7. The cells which secrete hydrochloric acid in the stomach are the
 A: oxyntic
 B: mucosa
 C: Goblet
 D: Epithelial
8. The matrix in cartilage is secreted by
 A: chondroblast
 B: osteoblast
 C: fibroblast
 D: Lacunae
9. Collenchyma differs from sclerenchyma in
 A: having thick cell walls
 B: being flexible
 C: having wide lumen
 D: being living at maturity
10. Which of the following is true about water potential?
 (i) it is zero for pure water
 (ii) it is the ability of a system to lose water
 (iii) it is given by solute potential plus pressure potential
 A: (i) and (ii)
 B: (i), (iii), (iv)
 C: (iii) only
 D: (iii & (iv)
11. Which of the following cells bears resemblance to the red blood cells of mammals

- A: sieve tubes
C: phloem
- B: sieve element
D: Tracheid

12. The power of a microscope to distinguish two objects closely placed as being two distinct entities is called
A: magnifying power
C: Resolving power
- B: resolving power
D: eye piece power
13. The process by which a water molecule is split by light during photosynthesis is called
A: photophosphorylation
C: oxidative phosphorylation
- B: Hill reaction
D: Antolysis
14. The process by which chemicals reacted together to form the earliest prokaryotic cell is called:
A: organic evolution
C: chemical evolution
- B: primeval soup evolution
D: continental drift
15. Which of the following theories suggests that life originated from non-living materials?
A: A biogenesis
C: panspermia
- B: biogenesis
D: oparin theory
16. A study focusing on only one population is called:
A: Autecology
C: population ecology
- B: synecology
D: community ecology
17. Which of the following is true about primary succession?
A: takes place on a land that was once inhabited before
B: takes place on bare rocks only
C: can take place on an area that has never been inhabited before by plants
D: the pioneer community is that of mosses and ferns
18. A Hydrosere is
A: A stage of succession
B: A succession beginning on a water body
C: A climax community
D: A succession beginning in a desert
19. The single land mass that existed before formation of separate continents on earth is called
A: pangea
B: Iguana island
C: Isthmus of Panama
D: big bang
20. The Haversian system is made up of
A: The Haversian canal only
B: The lamellae and its osteoblasts only
C: The lamellae, osteoblasts surrounding the Haversian canal
D: compact bone
21. Which of the following pigments is found in all photosynthetic organisms
A: Chlorophyll B
C: xanthophyll
- B: Chlorophyll C
D: chlorophyll a
22. The primary electron acceptor of photosystem II is

34. Alleles are...
A: alternative forms of the same gene
B: Loci of related groups of genes
C: sequences of bases along a chromosome
D: groups of genes which remain together during chromosomal division
35. Which of the following is prokaryote?
A: fungi B: Algae C: plasmodium D: bacteria
36. Which of the following is not found in the structure of chloroplasts of flowering plants
A: lipid globules B: starch granules
C: DNA D: A single outer membrane
37. A biosynthetic path involves the stages below
DNA $\xrightarrow{1}$ RNA $\xrightarrow{2}$ Ribosomes $\xrightarrow{3}$ protein
- Which stage is represented by number 1?
A: Replication B: Translation
C: Transcription D: Transduction
38. Plant tissues with the ability to divide indefinitely are termed as
A: meristeristematic B: cytokinetic cells
C: Apical cells D: All the above
39. Which of the following plat tissues contain the largest percentage of starch
A: collenchyma B: schlerenchyma
C: parenchyma D: cortex cells
40. Enzymes are mainly formed by
A: Globular proteins B: structural proteins
C: carrier proteins D: indicator proteins

SECTION B:

41. Using examples define each of the following terms:

(a) (i) Lock and key hypothesis

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(ii) Enzyme cofactors

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(iii) Enzyme activators

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(iv) prosthetic groups

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(v) Coenzyme

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(b) Explain how denaturing an enzyme may affect its efficiency as a catalyst

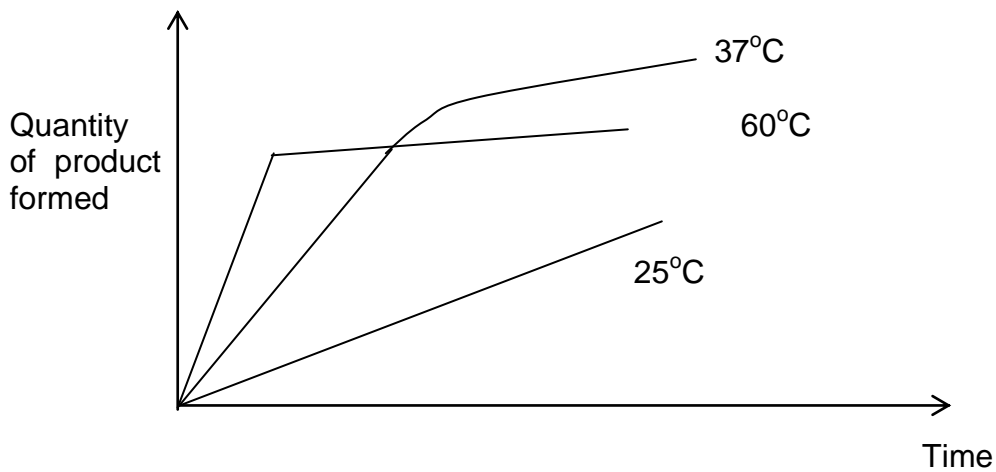
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(c) Study the figure carefully and comment on the shapes of the curves given for the enzyme reaction at different temperatures



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37°C.....
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60°C.....
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42. (a) Distinguish between an endocrine and exocrine gland

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(b) Describe how the following glands release their secretion

(i) Merocrine glands

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(ii) Apocrine glands

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(iii) Holocrine glands

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 (c) Using diagrams describe the structure of the areolar tissue pointing out clearly the function of each part

(d) How does cartilage differ from bone

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43. In a genetics investigation using the fruitfully drosophila melanogaster. The following experiments were performed

EXPERIMENT 1

Male flies showing the two recessive characteristics claret eyes (Cl) and vestigial wings (Vg) were mated with female flies which were true breeding for wild for wild type eyes (Cl +) and wild type wings (Vg+)

The female offspring of this first cross were then mated to their male parents. The results of this second cross were as follows:

CHARACTERISTICS	NUMBER
Claret eyes, vestigial wings	72
Claret eyes, wild type wings	80
Wild type eyes, vestigial wings	76
Wild type eyes, wild type wings	84

EXPERIMENT 2

Male flies showing the two recessive characteristic purple eyes and vestigial wings use mated to female flies which were true breeding for wild type eyes and wild type wings.

The female offspring of this first cross were then mated to their male mated to their male parents and the following results were observed.

CHARACTERISTICS	NUMBER
Purple eyes, vestigial wings	128
Purple eyes, wild type wings	21
Wild type eyes, vestigial wings	17
Wild type eyes, wild type wings	136

(a) (i) Using suitable genetic cross diagrams explain fully the reasons for the results of the crosses obtained in experiment (1)

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(ii) What deductions can be made about the positions of the claret eye allele and the vestigial wing allele on Drosophilla chromosomes

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(b) (i) Explain why the results observed in the second cross of experiment 2 are different from those observed in experiment (1)

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(ii) What can be deduced about the relative positions of the purple eye allele and the vestigial wing allele on drosophilla chromosomes

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(c) Comment on the significance of these results in relation to Mendel's second law of inheritance

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44. (a) Define the following terms

(i) continental drift

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(ii) organic soup

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(b) Distinguish between organic evolution and chemical evolution

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(c) Describe briefly any four theories that explain the origin of life on the earth

(i).....

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(ii).....

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(iii).....

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(iv).....

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(d) What are the criticisms of Darwin's theory of Natural selection?

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END