



## Yesmark tuition services

### **BIOLOGY PAPER 2 (THEORY)**

#### *INSTRUCTIONS*

1. This paper consists of two sections A and B. Answer **All** the questions in section A in the spaces provided.
2. In section B answer questions 6 (**Compulsory**) and either Questions 7 or 8 in the spaces provided.

#### **FOR EXAMINER'S USE ONLY**

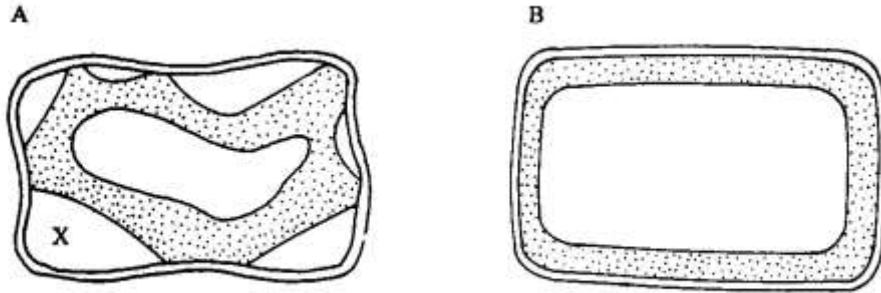
<b>SECTION</b>	<b>QUESTION</b>	<b>MAXIMUM SCORE</b>	<b>CANDIDATE'S SCORE</b>
A	1	8	
	2	8	
	3	8	
	4	8	
	5	8	
B	6	20	
	7	20	
	8	20	
<b>TOTAL SCORE</b>		<b>80</b>	

*This paper consists of 8 printed pages. Candidates should check carefully to ascertain that all the pages are printed as indicated and no questions are missing*

SECTION A (40 MARKS)

Answer all the questions in this section in the spaces provided after each question.

1. The diagrams below represent two plant cells A and B placed in two different solutions. Study the diagrams and answer questions that follow:



- a) Identify the nature of solution into which each cell was placed. (2marks)

A .....

B .....

- b) Name the physiological process responsible for the observed results. (1mark)

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- c) Give the correct biological term used to describe cell A. (1mark)

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- d) Describe what would happen if a red blood cell was placed in the solution in which cell B was placed. (2 marks)

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- e) Explain why freshwater amoeba do not burst when placed in distilled water.(2 marks)

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2. a) What is meant by the term linked genes? (1mark)

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b). Haemophilia is a genetic condition transmitted through a recessive gene linked to **X** chromosome. The normal gene may be represented by **X<sup>H</sup>**.

i) What is the genotype of a haemophilic female? (1mark)

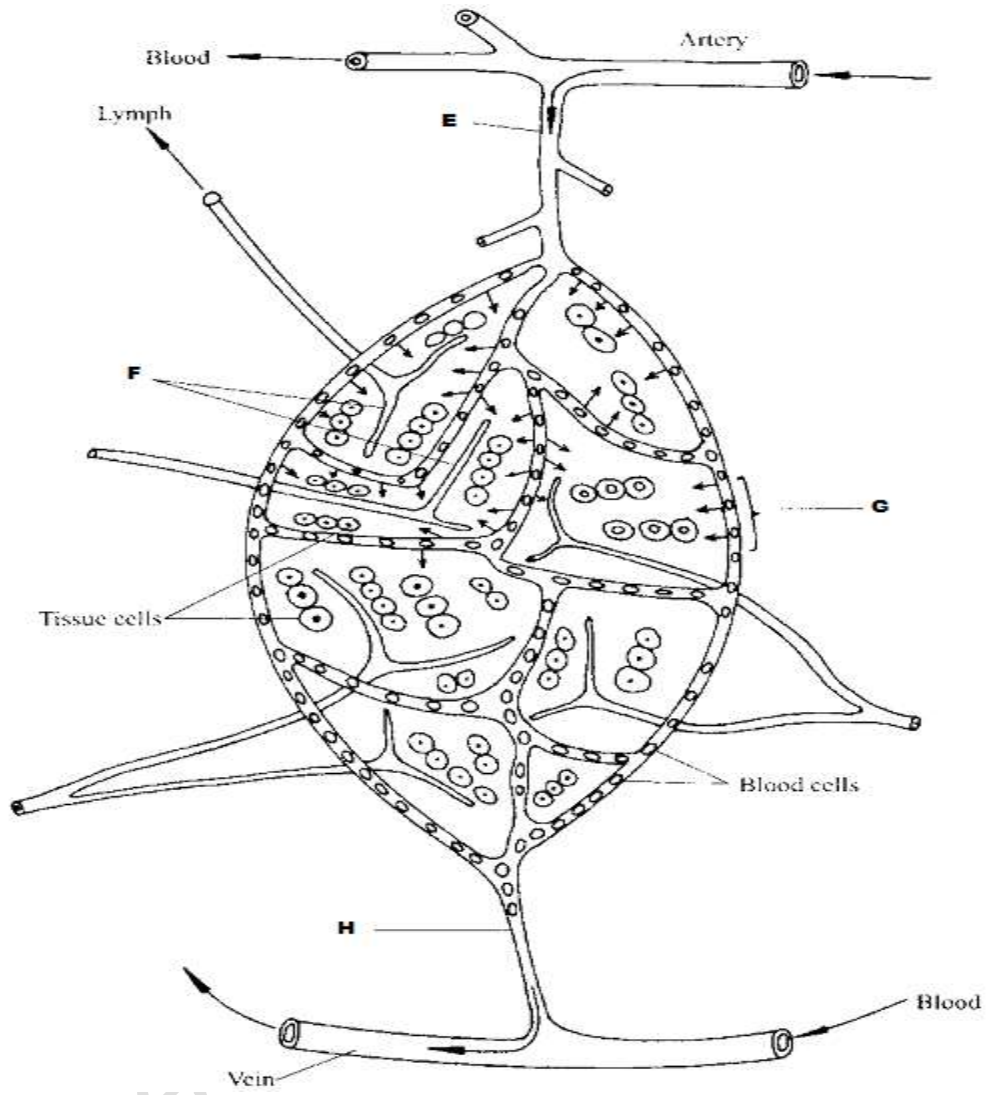
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ii) A woman who is a carrier for the haemophilia gene marries a normal man. Work out the phenotypic ratio for their offspring. (4marks)

iii) Haemophilia is more common in males than in females. Explain this phenomenon. (2marks)

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3. Study the diagram below and answer questions that follow.



a) Identify the parts labeled E, F and H. (3marks)

E.....

F.....

H.....

b) State the importance of the process represented by G in bodies of living organisms.

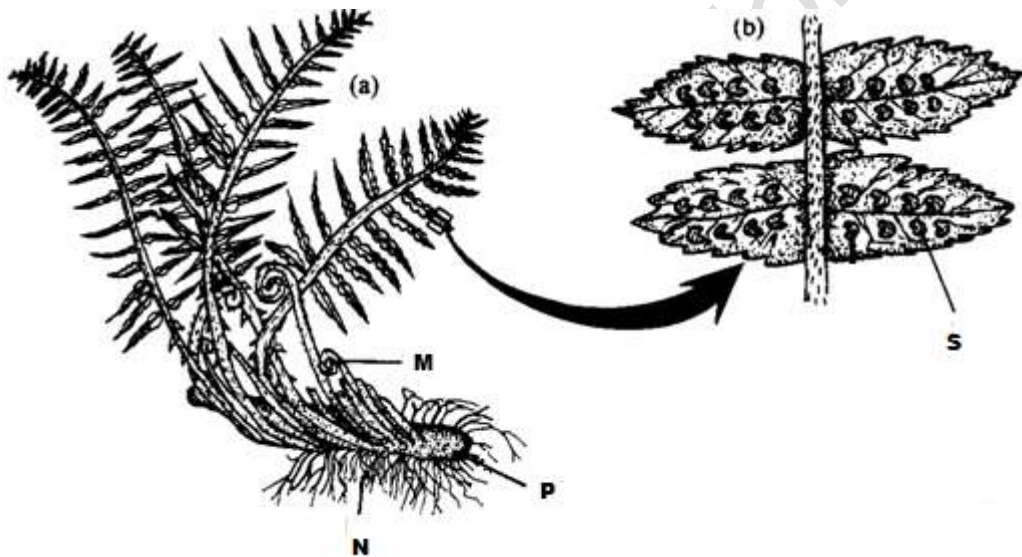
(2marks)

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c) Compare the composition of blood in vessel E and H. (3 marks)

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4. Use the figure below to answer questions that follow:



a) Identify the division to which the specimen belongs. (1mark)

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b) Name the parts labeled M, N and P. (3 marks)

M.....

N.....

P.....

c) Name the spore producing structures that constitute the part labeled S. (1mark)

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d) Identify three features that distinguish the specimen above from higher plants. (3 marks)

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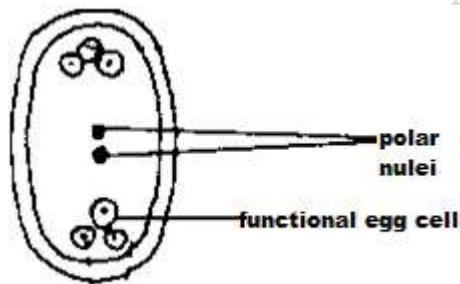
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5. a) Name the plant organs in which meiosis take place. (2 marks)

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b) Identify the figure below. (1 mark)



c) Using the diagram, explain the meaning of double fertilization in flowering plants. (1 mark)

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d) What happens to the structure above after fertilization? (1 mark)

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e) State three adaptations of fruits to animal dispersal. (3 marks)

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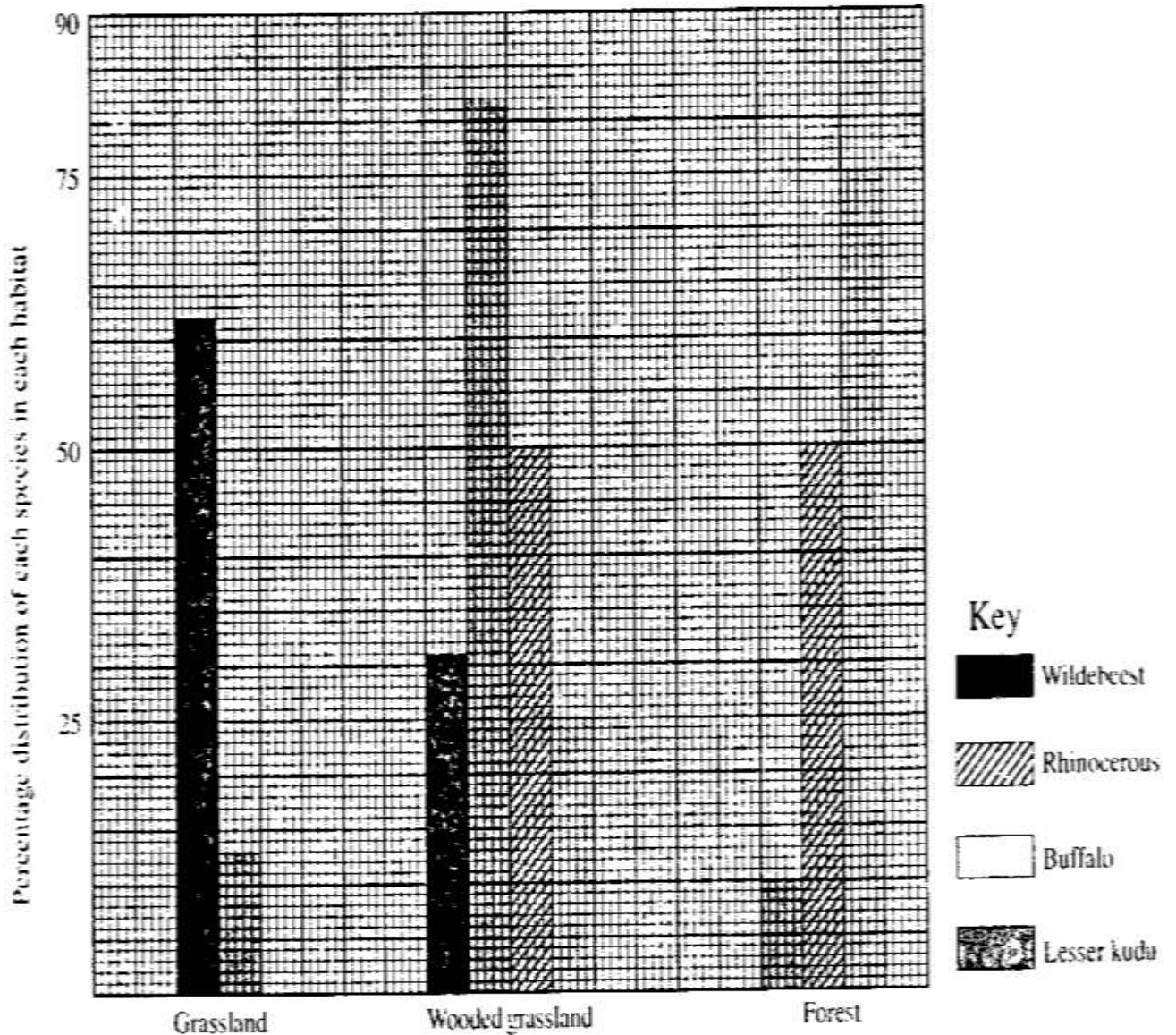
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**SECTION B (40 MARKS)**

Answer questions 6 (*compulsory*) and either question 7 or 8 in the spaces provided.

6. A study was carried out to investigate the distribution of certain mammals in a game reserve with three distinct habitats. The results were as presented in the graph below.



- a) Suggest a suitable method that could have been used to obtain the data from the three habitats. (1 mark)
- .....
- b) Suggest three reasons why all mammalian species were found in the wooded grassland. (3 marks)

- c) From the data, suggest the feeding habits of:
- (i) Wildebeest. (3 marks)
  - (ii) Lesser kudu. (3 marks)
- d) The vegetation in this game reserve was destroyed by fire. Two weeks after the onset of rains, most of the animals were found in the grassland. Explain. (4 marks)
- e) Name three environmental factors that are necessary for growth of vegetation other than rain. (3 marks)
- f) For each of the factors, briefly explain its importance. (3 marks)
7. a) Describe how water molecules are absorbed from the soil and moves to the leaves in a tree. (10 marks)
- b) Describe the mechanism of inhalation in human beings. (10 marks)
8. a) Describe adaptations of the reproductive system of a male mammal to its function. (10 marks)
- b) Explain how the following vertebrae are adapted to their function. (10 marks)
- (i) Cervical vertebra.
  - (ii) Thoracic vertebra.