NAME: ..... INDEX NO .....

ADM NUMBER..... CLASS.....DATE.....

BIOLOGY PAPER 2,
231/2
MAY 2016
TIME: 2 HOURS

MARAPE HIGH SCHOOL
PRE- TRIAL BIOLOGY PAPER 2 EXAM

INSTRUCTIONS TO CANDIDATES:

- *Write your **name** and **index number** in the spaces provided.*
- *Sign and write **date** of examination in the spaces provided above*

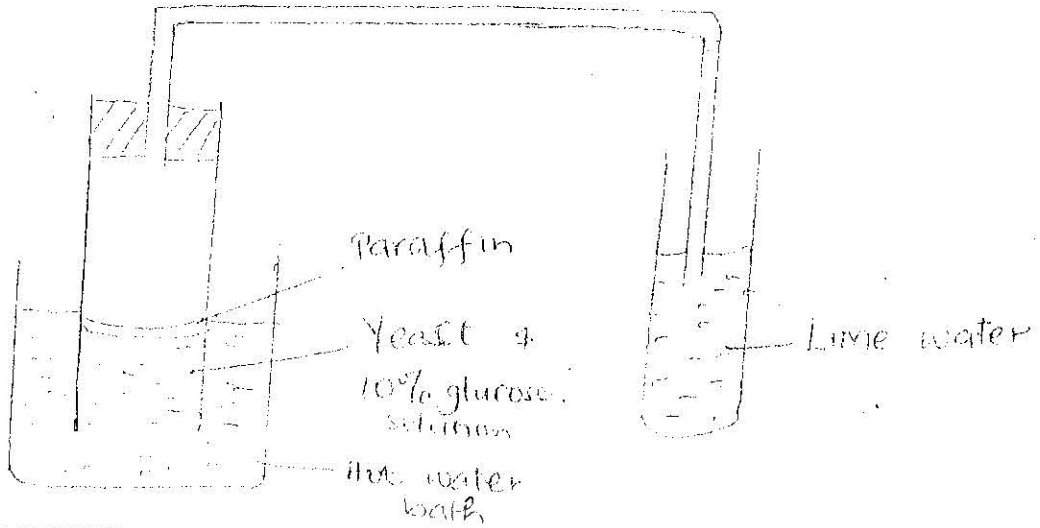
For Examiner's Use Only:

QUESTIONS	MAXIMUM SCORE	CANDIDATE'S SCORE
1	8	
2	8	
3	8	
4	8	
5	8	
6	20	
7 or 8	20	
Total Score	80	

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

1. The set up below represent a physiological process the set up was placed in a water. Bath then maintained at 35°C. for 30 minutes.

a) Record your observations. (2 mks)



b) Explain the observations made in (a) above. (2 mks)

c) Name the process that took place in the boiling tube. (1 mk)

d) State the role of the process in industries. (1 mk)

e) A drop of the content in the boiling tube were placed on the microscope and the observation showed that there were many yeast daughter cells
Name the type of a sexual reproduction that lead to the production of the daughter cells. (1 mk)

f) Why was the temperature of water bath maintained at 35°C (1 mk)

2.a) Name the physiological process by which gas exchange takes place at the respiratory surface in animals and plants. (1 mks)

b) Name the leaf tissue of a terrestrial plant which is primarily responsible for gas exchange. (1 mk)

c) State and explain the two major problems terrestrial plants have to overcome with relation to respiratory surfaces. (4 mks)

d) Explain two roles of respiration (2 mks)

3. a) State two ways in which the lymphatic system is functionally important to humans. (2 mks)

b) Give the main cause of the following diseases
i) Leukemia

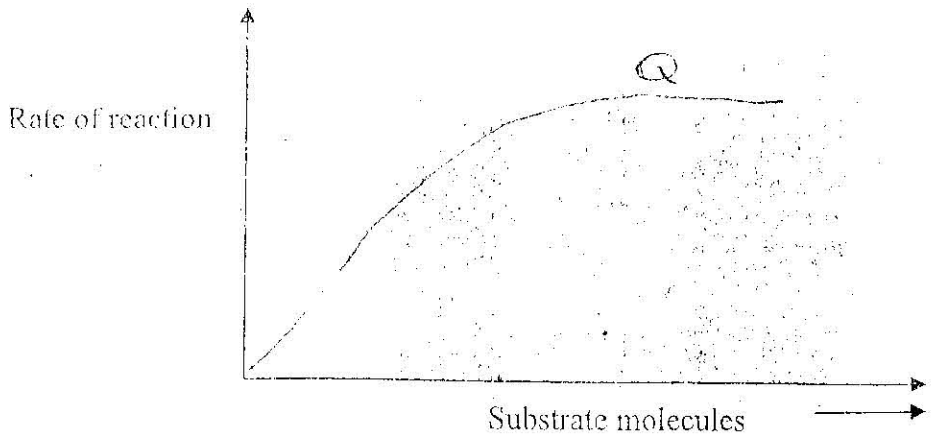
ii) Sickle – cell anaemia. (2 mks)

c) State two reasons why blood clot formed on the surface of a cut would be useful to the body. (2 mks)

d) Explain the fate of glucose after assimilation (2 mks)

4. a) A biological washing detergent contains enzymes which removes stains like mucus and oil from clothes.
i) Explain why boiling the clothes with detergent is less likely to remove stain .
(1 mk)

b) The figure shows the effect of substance molecule concentration on the rate of reactions.



i) Identify the factor limiting rate of reaction at Q. (1 mk)

ii) Explain the effect of enzyme inhibitors on enzyme controlled reaction.
(2 mks)

c) Differentiate between dentition and dental formula. (1 mks)

d) i) What is implantation. (1 mk)

ii) State two roles of the placenta during pregnancy (2 mks)

5. In Maize, yellow colour R is dominant over white colour. Describe how one would establish whether a given sample of yellow maize is pure or hybrid show your working.
(4 mks)

b) Using a punnet square; explain why the view that " some women have a tendency of giving birth to boy or girl babies" has no scientific foundation. (2 mks)

c) Name two conditions caused by non- disjunction in man. (2 mks)

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SECTION B

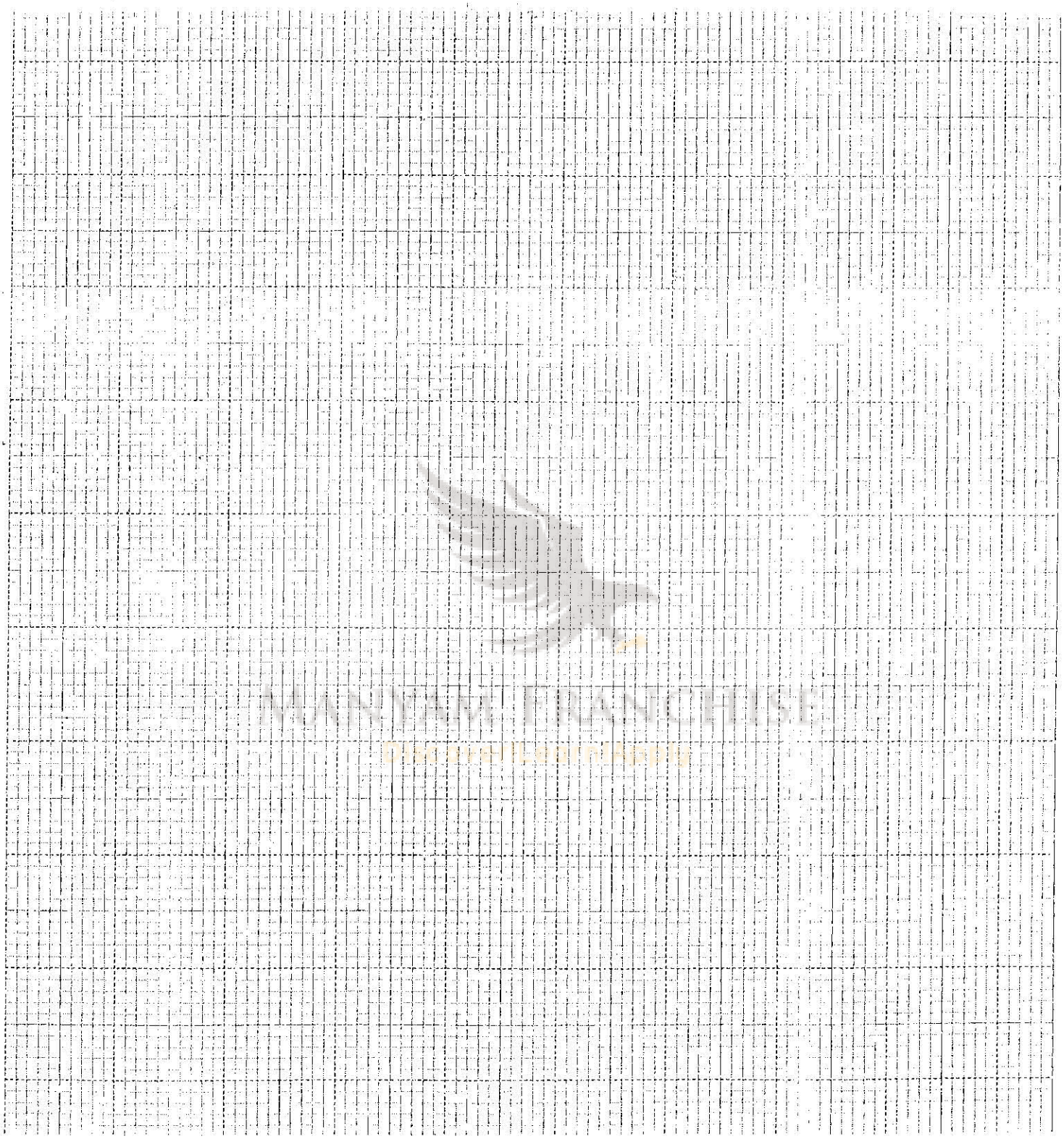
Instructions

Questions 6 is compulsory, and answer one of either question 7 or 8.

6. The hormone Chorionic Gonadotrophin (HCG) is released from embryonic tissues. Study the table below which shows changes in concentration in the blood of HCG and progesterone during the first 36 weeks of pregnancy.

Time in weeks	Concentration of HCG (arbitrary units)	Concentration of Progesterone (arbitrary units)
0	0	7
2	3	7
4	15	8
8	60	9
12	45	10
16	24	11
20	12	13
24	10	15
28	10	20
32	14	30
36	12	55

a) Using the grid provided plot a graph of concentration of HCG and progesterone produced against time (7 mks)



b) What is the concentration of HCG and progesterone in week 11? (2 mks)

c) Account for the concentration of HCG at

i) 0-4 wks (2 mks)

ii) At week 8 (2 mks)

iii) 12 – 20 weeks (2 mks)

d) Give two reasons for continued increase of progesterone hormone in the blood throughout the 36 weeks period. (2 mks)

e) Name three other hormones produced during the period of pregnancy. (3 mks)

7. Explain the functions of digestive juices in human (20 mks)

8. i) Distinguish between respiration and gaseous exchange . (2 mks)

ii) Describe breathing mechanism in man (14 mks)

iii) Explain Disadvantage of anaerobic respiration. (4 mks)