

**800/1**  
**COMMERCE**  
**Paper 1**  
**July / August**  
**2 $\frac{1}{2}$ hours**



## **WAKISSHA JOINT MOCK EXAMINATIONS**

**Uganda Certificate of Education**

**COMMERCE**

**Paper 1**

**2 hours 30 minutes**

### **INSTRUCTIONS TO CANDIDATES:**

- *This paper consists of two sections, A and B.*
- *Answer all questions in section A and any four from section B.*
- *Any additional question(s) answered will not be marked.*
- *Answers to all questions must be written in the answer booklet/sheets provided.*
- *Each question in section B carry equal marks.*
- *You may lose marks for untidy work.*

## SECTION A (20 MARKS)

*Write the letter corresponding to the correct answer for each question  
in the answer booklet/sheet provided.*

1. Which of the following statements is correct?
  - A. Production is part of commerce.
  - B. Economics is part of commerce.
  - C. Trade is part of commerce.
  - D. Business is part of commerce.
2. The generation of gas from animal manure can be classified under
  - A. primary production.
  - B. secondary production.
  - C. tertiary production.
  - D. direct production.
3. Commodities X and Y are substitutes. If the price of commodity X increases, what will be the effect on the quantity demanded of commodity Y?
  - A. Increase.
  - B. Decrease.
  - C. First increase then decrease.
  - D. Remain constant.
4. The difference between visible and invisible exports and visible and invisible imports of a country is called,
  - A. terms of trade.
  - B. balance of payments.
  - C. balance of trade.
  - D. terms of payments.
5. The principle of insurance which aims at restoring the insured to the original position is called,
  - A. subrogation.
  - B. proximate cause.
  - C. utmost good faith.
  - D. indemnity.
6. The selling of goods on a wheel barrow from place to place is a good example of
  - A. tied shops.
  - B. multiple shops.
  - C. itinerant traders.
  - D. mobile shops.

7. Monetary policies are used by the central bank to.
- A. increase the amount of money in circulation.
  - B. regulate the amount of money in circulation.
  - C. reduce on credit creation.
  - D. stop credit creation.
8. A case in sea transport where the shipper loads the goods for one customer destined for a particular journey is called,
- A. full container load.
  - B. less container load.
  - C. consignees container load.
  - D. consignors container load.
9. "Not allowed to people under 18 years". This warning on bottles of beer is a form of
- A. consumer survey.
  - B. sales promotion.
  - C. advertising.
  - D. consumer protection.
10. Gross profit expressed as a percentage of turnover is known as,
- A. rate of return on turnover.
  - B. rate of turnover.
  - C. mark up.
  - D. margin.
11. The main branches of production are
- A. commodity industry, commerce and service industry.
  - B. direct and indirect production.
  - C. commodity industry and service industry.
  - D. industry trade and Aids to trade.
12. Middle men who sell products on behalf of foreign manufacturers in a home market are called
- A. import merchants.
  - B. del-credere agents.
  - C. import brokers.
  - D. import commission agents.
13. Which of the following is an advantage of registered mail to the sender?
- A. Payment is on delivery.
  - B. There is compensation in case of loss.
  - C. Lower charges.
  - D. Fast delivery.

**Turn Over**

14. Which of the following document gives details on how companies hold meetings?
- Prospectus.
  - Articles of association.
  - Memorandum of association.
  - Certificate of incorporation.
15. Which of the following is an agreement for hiring a ship for a specific route?
- Ship manifest.
  - Floating policy.
  - Time charter.
  - Voyage chartered.
16. The efficiency of a business is indicated by its
- rate of turnover.
  - gross profit.
  - net profit.
  - rate of return on capital.
17. Why is it necessary to create a customs union among nations?
- Have an agreement and political union.
  - Collect more money from imports.
  - Create large market for products.
  - To increase an internal market.
18. The type of business where profits are shared according to members participation is called
- public limited company.
  - private limited company.
  - co-operative society.
  - partnership.
19. The type of tax levied on goods being transported through another country is called
- Octori tax.
  - Sumptuary tax.
  - Specific tax.
  - Advalorem tax.
20. A traders total sales was shs 480,000, gross profit was shs 54000 and expenses shs 24,000. What was the value of Net profit ratio.
- 39%
  - 32%
  - 27%
  - 47%

## **SECTION B (80 MARKS)**

*Answer any four questions.*

21. (a) Distinguish between location and localisation of an industry or industries. (4 marks)
- (b) Explain **eight** factors that may lead to localisation of an industry. (16 marks)
22. (a) Give **five** differences between chain stores and departmental stores. (10 marks)
- (b) State **five** advantages of large scale retail businesses over small scale retail businesses. (10 marks)
23. (a) Outline **four** characteristics of a good warehouse. (4 marks)
- (b) Explain **four** advantages of a bonded ware house to the;
- (i) Importer. (8 marks)
- (ii) Government. (8 marks)
24. (a) Give **five** differences between private and public limited companies. (10 marks)
- (b) Explain **five** advantages of a public limited company over other forms of business units. (10 marks)
25. (a) Explain the following terms as used in insurance:
- (i) Surrender value. (2 marks)
- (ii) Contribution. (2 marks)
- (iii) Assessor. (2 marks)
- (iv) Actuary. (2 marks)
- (b) Give **six** reasons why insurance services are not spread country wide. (12 marks)
26. (a) Define consumers protection. (2 marks)
- (b) Give **five** reasons why consumers should be protected. (10 marks)
- (c) State **four** ways under which consumers can be protected. (8 marks)
27. (a) State **four** methods a trader may apply to promote his sales. (4 marks)
- (b) Explain **five** factors a trader should consider when choosing a medium of advertising. (10 marks)
- (c) List **six** services offered by specialised agencies to traders in Uganda. (6 marks)

**Turn Over**  
5

28. (a) State **four** benefits of business calculations to a trader. (4 marks)

(b) The following records were extracted from the books of Mutekanga Joseph a trader in Wakiso town council for the year ending 31<sup>st</sup> December 2021.

|  |             |
|--|-------------|
| Stock as at 1 <sup>st</sup> January 2021 ..... | 8,000,000   |
| Year purchase .....                            | 120,600,000 |
| Year sales .....                               | 155,700,000 |
| Returns inwards.....                           | 1,240,000   |
| Return outwards.....                           | 820,000     |
| Stock at as at 31 <sup>st</sup> Dec 2021 ..... | 6,200,000   |

Using the above information calculate:

- (i) Turn over. (3 marks)
- (ii) Net Purchases. (3 marks)
- (iii) Goods available for sale. (3 marks)
- (iv) Cost of sales. (3 marks)
- (v) Rate of stock turn. (4 marks)

**END**

Name: ..... Centre/Index No: .....

School..... Signature.....

112/2  
**ENGLISH LANGUAGE**  
**PAPER 2**  
**July/August**

**2 hours**



**WAKISSHA JOINT MOCK EXAMINATIONS**

**Uganda Certificate of Education**

**ENGLISH LANGUAGE**

**SUMMARY, COMPREHENSION AND GRAMMAR**

**Paper 2**

**2 hours**

**INSTRUCTIONS TO CANDIDATES:**

- *All questions are to be answered.*
- *All your answers must be written on this question paper.*

*For examiner's use only*

| Question | 1 | 2A | 2B | 3A | 3B | Total |
|----------|---|----|----|----|----|-------|
| Marks    |   |    |    |    |    |       |

# 1. Read the passage below and answer the questions that follows it.

Nearly half of the children born to married parents in this country go through a divorce experience before they are eighteen—about one million children each year. For these children, even more than for their parents, divorce can be an extraordinarily difficult experience. For adults, a divorce may offer advantages - pursuit of a new career, a new hobby, a new spouse, or a new lover. For them, the divorce, although painful, can be a net gain. But children see no benefit in divorce. The end of their parents' marriage is a complete loss, turning their lives upside down.

Reactions vary with age, but across the board, children experience feelings of confusion and betrayal as they watch their family fall apart and feel neglected while their parents struggle with their own problems. They just wish their parents would get back together and shape up. But, beyond these initial reactions, how much does divorce affect children in the long run? Do they suffer permanent psychological and physical problems? Do they have trouble in school? Are they “victims” of the breakup in the same way some adults are? This issue of how much and how divorce affects children's well-being has attracted a lot of attention from researchers. A computer search of books and articles in the database PsycINFO reveals more than four thousand on the topic of “children of divorce”—half of them in the past decade.

The main goal of research on children of divorce has been to compare the functioning of these children with that of children in intact, two parent families. These comparisons provide ample evidence that children from divorced families have more behavioral, emotional, health, and academic problems. As we will see, the differences are not large and they are not necessarily permanent; nor are all children affected equally. But the differences are consistent across studies and statistically significant. Compared with children in intact families, children from divorced families are more likely to have conduct problems and show signs of psychological maladjustment: they have lower academic achievement, more social difficulties, and poorer self-esteem.

Researchers have also discovered that there are more subtle costs for children when they have to cope with their parents' divorce, costs that do not necessarily show up on standard tests of achievement, behavior, or health. These emotional costs include embarrassment, fear of abandonment, grief over loss, irrational hope of reconciliation, worry about their parents' well-being, anxiety about divided loyalties, and uncertainty about romantic relationships. In the early years after their parents' divorce, all children feel sad and almost all feel angry, and these feelings do not disappear easily. In one study of college students, researchers found that those who had experienced their parents' divorce reported distressing feelings, beliefs, and experiences. These were resilient young people and the divorce had occurred years earlier, but still they harbored painful feelings.

Children who are a little older are likely to find divorce bewildering. These preschool-age children don't understand what is going on. They don't know what the words “separation” and “divorce” mean. They don't understand why Daddy is leaving, why Mommy is crying. They are confused because they conceptualize a relationship only in terms of the person's physical presence. For them, love is being with the person. At this age children are frightened when the parent leaves, afraid of being left alone, anxious about being abandoned. If Daddy has left, who is to say that Mommy won't stop loving them and leave too? They are afraid about who will take care of them if Mommy does leave. Compared with older or younger children, these children are most distressed and upset, most vulnerable to feelings of loss and rejection. They have the most intense reaction to parents' separation of any age group.

*Source: Divorce : Causes and Consequences, Clarke-Stewart, Alison, (2006)*

## Question

In about 130 words summarise the effects of divorce on children.

## SUMMARY

ROUGH COPY

**Turn Over**

FAIR COPY

Total marks for Q. 1

2. A. Read the following passage and then answer the questions that follow.

THE **modern problem** of smoking primarily concerns the children. We adults must make up our own mind. What we did at first in ignorance, and later because of habit, does not now apply, as we now have more knowledge about smoking and we must not fail to use it for the younger generation. Those most in contact with children obviously have to make an effort not to smoke, or at least to explain their smoking to their children almost as an illness or habit. Children today are subjected to an environment where smoking is natural, **taken for granted**, and it is the non-smoker who is scorned and an outcast.

Clearly parents who smoke are at a **disadvantage in trying to restrain** their children. But nothing is lost if the smoking habits of older people can be linked to some specific period of strain or difficulty which can be explained to the children, instead of leaving them to think that smoking is as inevitable as eating, drinking and loving. It is not easy to convince children about the advantages of not smoking if they are used to seeing their parents with cigarettes, watch them offer cigarettes as a ritual to callers, give cigarettes for festive presents, see the relaxation of the evening grow around a pipe, experience the air of irritation when an adult gives up smoking. At the same time the parent may be beloved, adored, an example in all things. How, in this one matter, can faults in parents be suggested without the child losing all faith?

It is something if parents regretfully explain their addiction - this is more use than just ordering them not to smoke. Without seeming mean, it is also possible to stop having boxes of cigarettes lying around to be offered automatically to visitors. If you make children believe that it is a part of good manners in society to always be pushing cigarettes at visitors, they automatically absorb this useless habit.

The teacher who feels guilty about his small pipe of tobacco might-well conclude that **any sacrifice is wasted on his part** as his pupils see every day newspaper headings and television commercials full of praise of various tobaccos or cigarettes. In newspaper photographs of famous personalities, or ordinary people suddenly in the news, the pipe or cigarette is often an automatic part of the picture. To suggest wealth the cigar appears. Famous people lend their names to exploitation by tobacco firms. Every effort is made by a clever and resourceful advertising industry to suggest that smoking has to do with romance, with confidence and success, with relaxation or with concentration, whichever suits. They use the idea that any man or woman without a cigarette is not properly dressed.

To stop children smoking is not an easy matter, but some start could be made. Strict rules against smoking may **increase its pleasures**, but the possibility of punishment in schools could help. The restriction of smoking in public places, for instance the cinema; the removal of all advertising and a period of publicity showing the hazards of cancer; a deliberate attempt by parents, teachers and doctors, and others, who may set an example – all these are needed, together with a general assault on air pollution. .

(From *The Common Sense of Smoking* by C. M. Fletcher)

**Answer questions 2.1 to 2.5 on the question paper.**

- 2.1 What is the main problem in the first paragraph that is to be dealt with in the passage?

.....  
.....

**Turn Over**

- 2.2. What excuse does the author suggest older people should give to children for their smoking?  
.....  
.....
- 2.3. What does "offering Cigarettes as a ritual for callers" mean?  
.....  
.....
- 2.4. To stop children thinking that smoking is necessary for entertaining guests, what does the author suggest?  
.....  
.....
- 2.5. Give the meaning of the following phrases as used in the extract.
- (i) modern problem  
.....
  - (ii) taken for granted  
.....
  - (iii) at a disadvantage in trying to restrain  
.....  
.....
  - (iv) any sacrifice is wasted in his part.  
.....  
.....
  - (v) Increase its pleasures.  
.....

|                       |  |
|-----------------------|--|
| <b>Marks for Q.2A</b> |  |
|-----------------------|--|

**2B. Read the following passage and answer the questions that follow.**

Ochola learned from his friend that the steamer had been delayed for two hours. It would now leave Kisumu at noon. He was most disappointed. Nyapol already looked bored and this was going to make her even more resentful. Such delays were bad omens, particularly when you had a long journey ahead. A pile of cargo had just arrived by goods train and had to be loaded before the steamer left Kisumu. He thought it wise not to tell his wife what had hap-pened.

The wagon train stopped with a jolt and all eyes turned towards it. Within minutes, the wagon was surrounded by half-naked men, some of whom had quickly climbed on to it.

'Harambe! ee!

'Harambe! ee!

The men had not finished uttering the words when one man stepped forward and bent below the wagon, his friends whisked the bag load and rested it on his back lengthwise. The man trotted pitifully with the load, towards the steamer. He hesitated on the pavement, bent to one side and the bag fell to the ground. The man straightened his back and ran back to the wagon.

The song continued several times as the men tottered along with the bags, which looked bigger than themselves. The contents might have been maize, millet, or groundnuts, each weighing up to two hundred pounds. Nyapol found it inconceivable that the same men she had watched trotting with heavy bags on their sweaty backs went back to the wagon laughing among themselves and grinning at the stupefied passengers. Once they were back at the wagon, they wasted no time before taking on another load. In fact, it looked as if they were competing to see who could carry the greatest number of bags.

It was not anger that made Nyapol's eyes sting with tears. It was pity. Though the men obviously looked happy and proud of their work she concluded that they had been bewitched—laughing under such conditions was lunacy.

When the men finally began to show signs of exhaustion, Nyapol lost her control and sat there, sobbing quietly. An hour must have passed. The sun was high in the sky and beat furiously upon the naked chests of the labourers. They were perspiring heavily and beads of sweat from their heads poured down their faces and mingled with those on their chest. Their worn-out backs were white-washed with dust from the bags, while their once protruding bellies were now sunken.

'Why waste your tears? The men have chosen the job themselves. They are neither slaves nor prisoners: they are just normal men who have come to town to earn money to buy things for their wives,' explained Ochola, seeing his wife looking at the labourers and weeping for them.

'Ridiculous! Only bewitched men could willingly choose such a job! A man whose wife is bewitched as well.'

Ochola tried to explain to his wife about contract jobs but she would not try to understand. He was not in a mood to argue; he soon kept quiet and let his wife recover on her own. Nyapol jumped as the giant steamer boomed a loud warning. She was so frightened that she stood up and gripped Ochola's hand. Ochola soothed her.

'That's the signal to tell us that we should go on board,' he explained. 'There will be another hooter to announce the departure of the steamer.'

**Answer question 2.6 to 2.10 by putting a ring  around the letter of the most correct answer.**

2.6 Ochola thought it wise not to tell his wife what had happened,

- A. because it would make her more annoyed.
- B. so that the time would seem to pass more quickly.
- C. because the late departure was a bad omen.
- D. because they had a long journey ahead of them.

2.7 The men began to sing,

- A. because they were happy.
- B. because they were unhappy.
- C. to get ready for work.
- D. so that they could climb quickly on to the wagon.

**Turn Over**

- 2.8 The man hesitated before he put the bag on the pavement.
- to make sure he put the bag in the right place.
  - because the bag was too heavy for him to carry further.
  - because it was difficult to stop with the load on his back.
  - because he was mounting the pavement.
- 2.9 From the passage we could guess that 'inconceivable' means:
- likely.
  - unlikely.
  - impossible.
  - amusing.
- 2.10 Nyapol concluded that the men had been bewitched because,
- they looked happy at their work.
  - they were proud of their work.
  - they were happy and proud at their work.
  - they were laughing.

|                            |  |
|----------------------------|--|
| <b>Marks for Q.2B</b>      |  |
| <b>Total marks for Q.2</b> |  |

3. A) Re-write each item in 3.1 to 3.10 according to the instructions. Do not change the meaning of the original sentence.

- 3.1 The referee declared the game a draw. (Rewrite in the passive)

.....  
.....

- 3.2 The parents did not know that their son had been dismissed from school. (Rewrite to use: ..... aware of .....)

.....  
.....

- 3.3 "I am the most brilliant student in the whole class," Solomon said.  
(Begin: Solomon boasts .....)

.....  
.....

- 3.4 Wars are horrible. Mere words cannot describe them.  
(Join into one sentence using: ..... more.....)

.....  
.....

- 3.5 Although he worked hard to get the job, acute cholera attacked him soon after he had got it. (Rewrite using: ..... taken ill.....)
- .....  
.....

- 3.6 If the kitchen staff went on strike, the students would be asked to prepare their own meals. (Begin: Should the kitchen staff.....)
- .....  
.....

- 3.7 No one has succeeded in stopping corruption and killings. (Use:....failed to...)
- .....  
.....

- 3.8 If my brother had not worked hard to educate me, I would have been a street boy. (Begin: But for .....)
- .....  
.....

- 3.9 He was disgusted by her snoring. (Begin: What .....)
- .....  
.....

- 3.10 He carried only certain items. He considered such items essential for his journey. (Join the sentence using: “such” )
- .....  
.....

|                 |  |
|-----------------|--|
| Marks for Q. 3A |  |
|-----------------|--|

- B) For items 3.11 to 3.20, choose the best of the four alternatives to complete the statements given. Put a ring  around the letter that corresponds with your best choice.

- 3.11 He was warned not to ..... his money.

- A. free
- B. un fasten
- C. loose
- D. lose

- 3.12 She climbed .....the ladder and cut ..... the wood.

- A. down-up
- B. on-up
- C. up-down
- D. up-up

**Turn Over**

- 3.13 I have told you.....I know.  
 A. all what  
 B. all which  
 C. all that  
 D. all along
- 3.14 I will marry.....I like.  
 A. whoever  
 B. whoever  
 C. whatever  
 D. whomsoever
- 3.15 Fortune always favored the rich and made.....richer.  
 A. them  
 B. us  
 C. her  
 D. him
- 3.16 Many students..... failed this term.  
 A. has  
 B. are  
 C. have  
 D. were
- 3.17 Once upon a time.....our cows.  
 A. there wear  
 B. their were  
 C. there were  
 D. there ware
- 3.18 Teachers often scold students for inattention.....their words.  
 A. in  
 B. through  
 C. with  
 D. about
- 3.19 Bread and butter.....his favourite food.  
 A. have been  
 B. were  
 C. is  
 D. are
- 3.20 New tools make child's play of formerly.....jobs.  
 A. bark-breaking  
 B. back breaking  
 C. back-broken  
 D. buck-breaking

|                     |  |
|---------------------|--|
| Marks for Q.3B      |  |
| Total marks for Q.3 |  |

END

**273/2**  
**GEOGRAPHY**  
**Paper 2**  
**July/August**  
**2½ hours**



**WAKISSHA JOINT MOCK EXAMINATIONS**

**Uganda Certificate of Education**

**GEOGRAPHY**

**Paper 2**

**2 hours 30 minutes**

**INSTRUCTIONS TO CANDIDATES:**

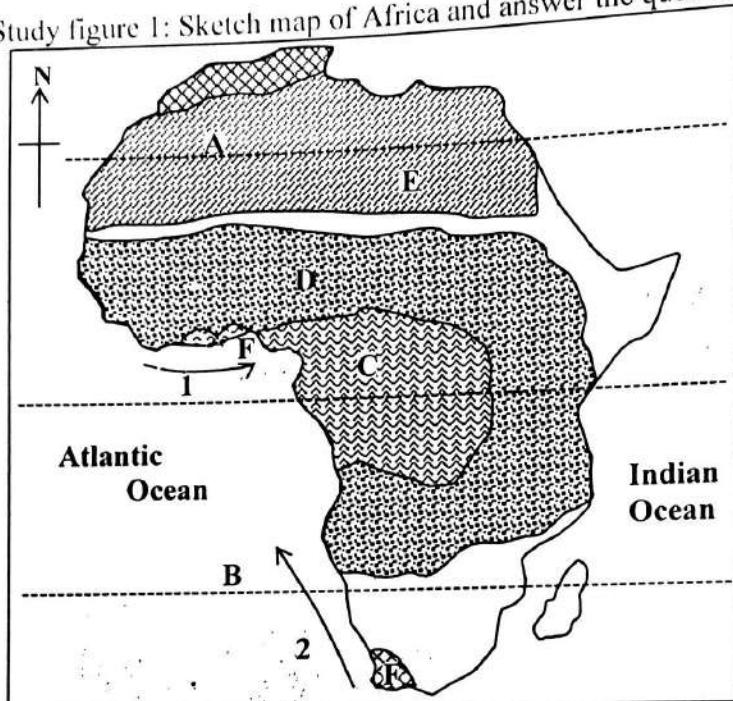
- *Answer four questions only.*
- *Choose two questions from part I and two questions from part II.*
- *In part II only one question should be chosen from any one region.*
- *Any additional question(s) answered will not be marked.*

## PART I : THE REST OF AFRICA

*Answer two questions only from this part.*

*Answer two questions only from this part.*

1. Study figure 1: Sketch map of Africa and answer the questions that follow:



**Fig. 1**

**KEY**

|  |                                |
|--|--------------------------------|
|  | Rainfall over 2000mm           |
|  | Rainfall between 1000 – 2000mm |
|  | Rainfall less than 500mm       |

- (a) Name;
- (i) Ocean currents 1 and 2.
  - (ii) Latitudes A and B.
  - (iii) Climatic regions C, D and E.
  - (iv) Gulf marked F.
- (8 marks)
- (b) State the conditions leading to;
- (i) High mean annual rainfall in Area C.
  - (ii) Low mean annual rainfall in Area E.
- (8marks)
- (c) Explain how rainfall amounts influence human activities carried out in region C.
- (5 marks)
- (d) State the negative effects of rainfall amounts on activities identified in (c) above.
- (4 marks)

2. Study table I; showing land under permanent crops for selected African countries and answer the questions that follow:

**Table 1**

| Country                      | Area under permanent crops(000's) hectares |
|------------------------------|--|
| Democratic Republic of Congo | 6700                                       |
| Ethiopia                     | 10,000                                     |
| Nigeria                      | 28,200                                     |
| Swaziland                    | 178  |
| Zambia                       | 5260                                       |
| Total                        | 50,338                                     |

Source: *African development indicators*; Pg 231.

- (a) Draw a pie chart to show the information in the table.
- (b) Name any two crops grown in any one selected African country.
- (8 marks)
- (3 marks)

- (c) Describe the conditions that have favoured the growth of permanent crops in selected African countries. (8 marks)
- (d) Explain the benefits of keeping land under permanent crops. (6 marks)

3. Study figure II: Sketch map of Rand Industrial region and answer the questions that follow:

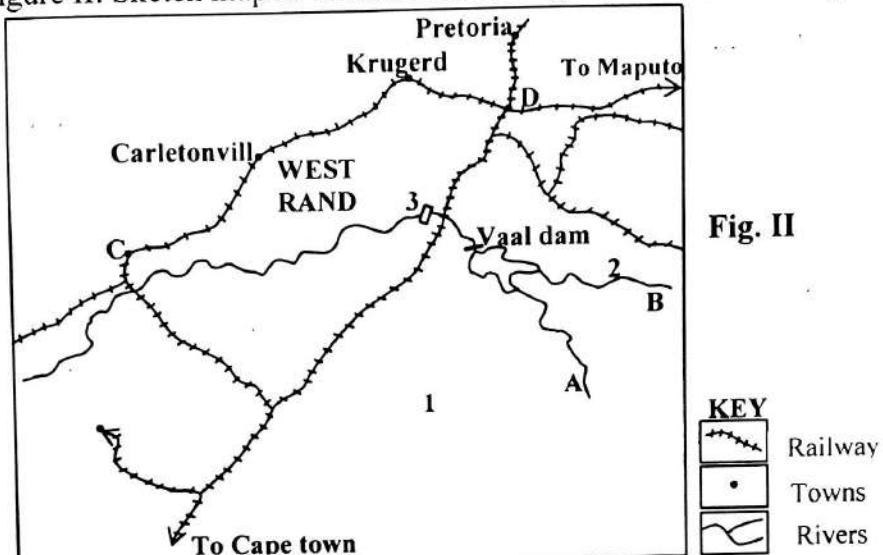


Fig. II

- (a) Name:
- Rivers A and B.
  - States 1 and 2.
  - Industrial centres C and D.
  - Feature 3.
- (7 marks)
- (b) Giving specific examples, describe the conditions for location of industries in South Africa. (8 marks)
- (c) Explain the environmental problems resulting from industrial growth in South Africa. (6 marks)
- (d) What changes should be taken to improve the industrial sector in South Africa? (4 marks)

4. Study figure III; Sketch map showing distribution of the railway system and answer the questions that follow:

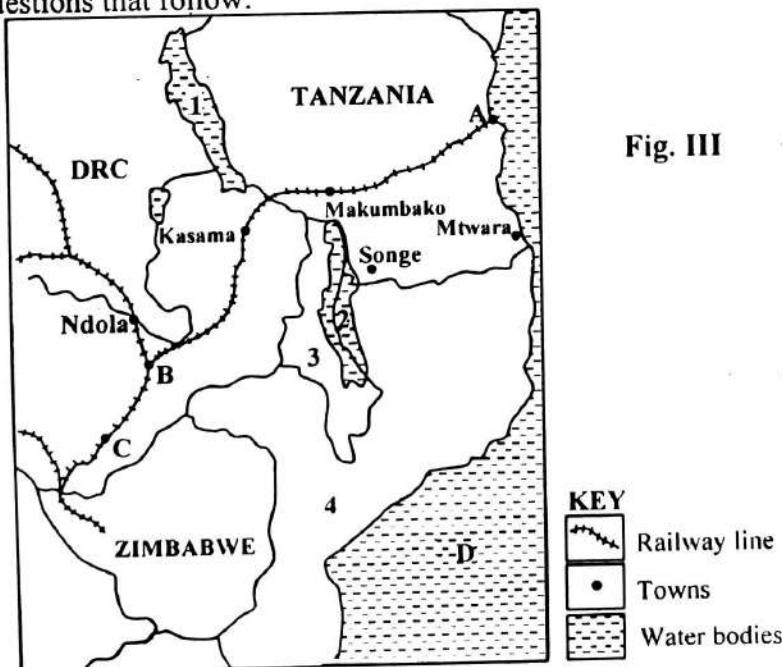


Fig. III

Turn Over

- (a) Name;
- Towns A, B and C.
  - Lakes: 1 and 2.
  - Countries 3 and 4.
  - Water body D.
- (8 marks)
- (b) Giving specific examples, describe the factors that have led to the distribution of the railway network in that part of Africa. (8 marks)
- (c) Explain the role of transport in the development of Africa. (5 marks)
- (d) Outline the problems facing the transport sector in Africa. (4 marks)

## PART II: STUDIES IN DEVELOPMENT

*Answer two questions from in this part.*

### REGION I: NORTH AMERICA

*Answer one question*

5. Study figure IV; Sketch map of New York and answer the questions that follow.

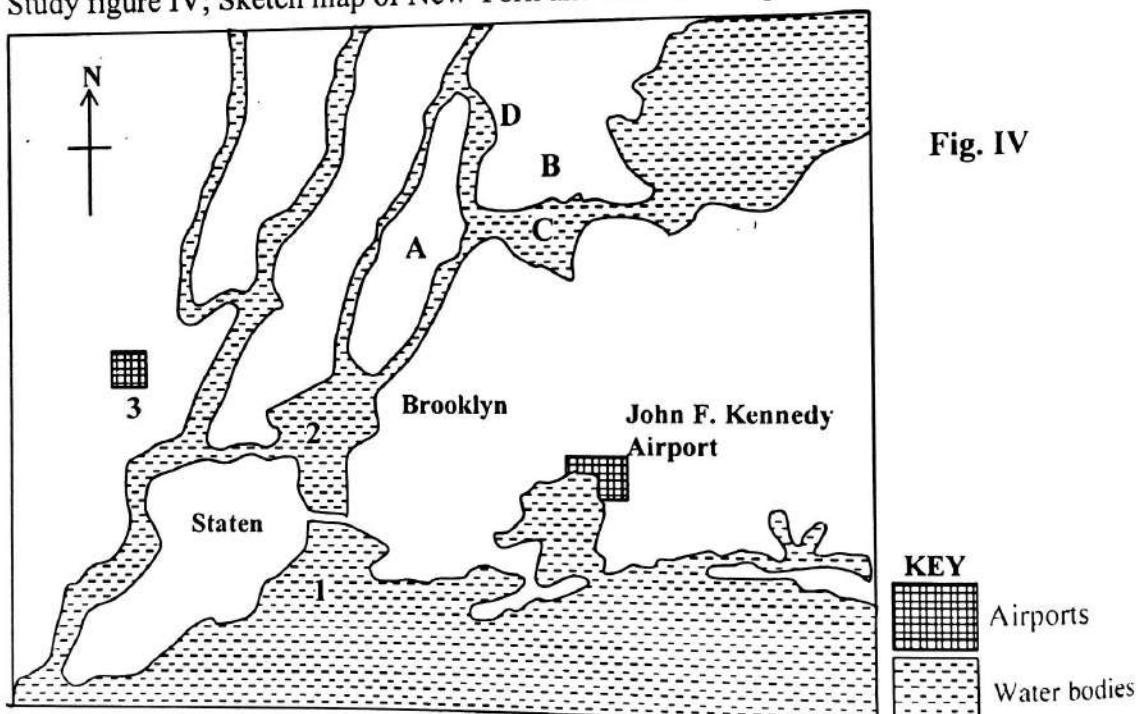


Fig. IV

- (a) Name;
- Island A and B.
  - Bays 1 and 2.
  - Rivers C and D.
  - Airport 3.
- (b) Describe the physical conditions that led to the establishment of New York port. (7 marks)
- (c) State the importance of New York port to the development of U.S.A. (8 marks)
- (d) Outline the problems facing New York port. (6 marks)
- (4 marks)

6. Study table II: showing cargo entering the great lakes region and answer the questions that follow.

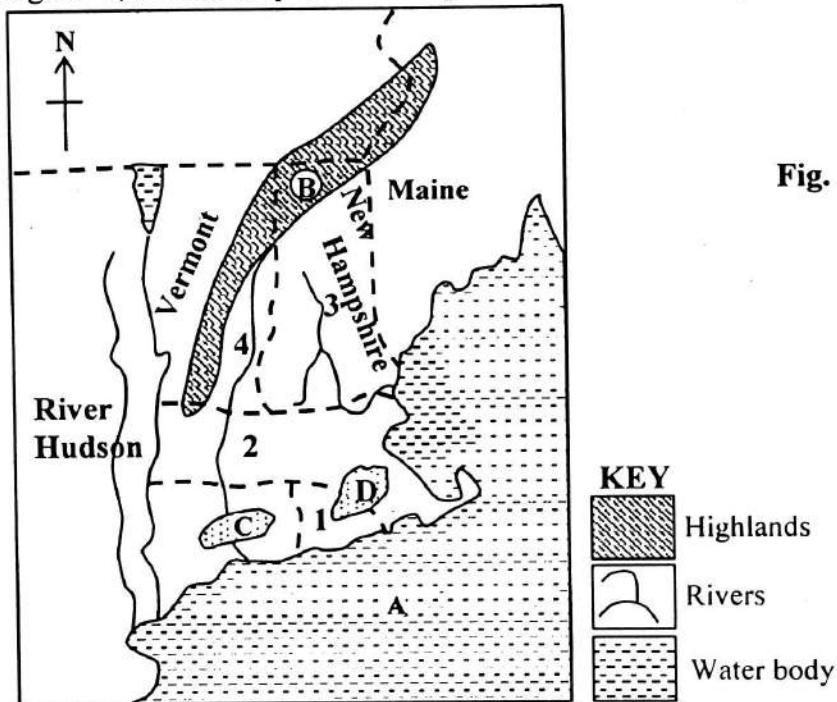
| Types of cargo | Montreal-L. Ontario section | Welland canal |
|----------------|-----------------------------|---------------|
| Iron ore       | 22,700                      | 16,000        |
| Iron and steel | 6,000                       | 670           |
| Others         | 9,300                       | 7,300         |

**Table II**

*Young and Lowry Pg 195.*

- (a) Calculate the percentage of cargo reaching the Welland canal from Montreal. (6 marks)
- (b) Describe the conditions that have led to the development of Iron and steel industries in the region. (8 marks)
- (c) Explain the negative effects of industrial development in the region. (6 marks)
- (d) State the changes that should be taken to reduce the effects of industrial growth in the region. (5 marks)

7. Study figure V; Sketch map of New England and answer the questions that follow:



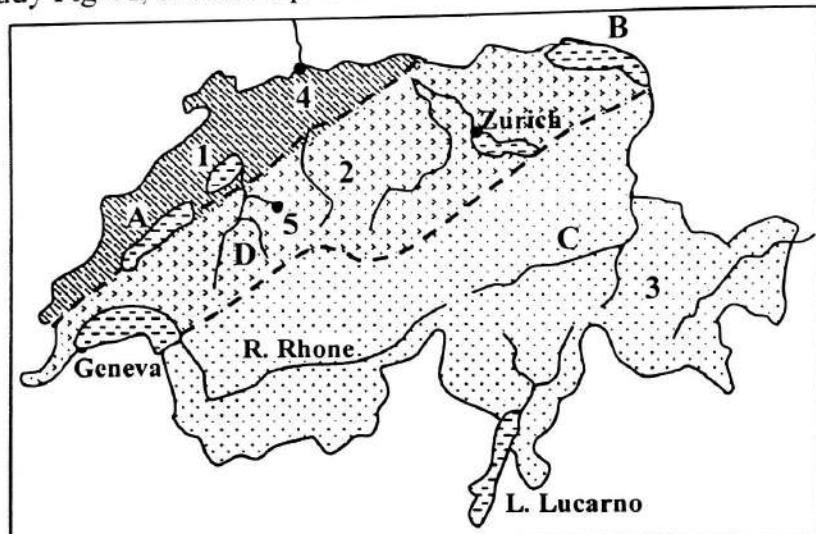
- (a) Name;
- States 1 and 2.
  - Rivers 3 and 4.
  - Water body A.
  - Highland B.
  - Major crops grown in areas C and D
- (b) Describe the factors that have favoured Agriculture in New England. (8 marks)
- (c) State the contributions of the Agricultural sector to New England. (5 marks)
- (d) What steps have been taken to improve agriculture in New England? (4 marks)

**Turn Over**

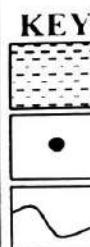
## REGION II: RHINELANDS

Answer one question

8. Study Fig VI; sketch map of Switzerland and answer the questions that follow:



**Figure VI**



- Water bodies
- Towns
- Rivers

- (a) Name;
- Physical regions 1, 2, and 3.
  - Lakes A and B.
  - Rivers C and D.
  - Towns 4 and 5.
- (9 marks)
- (b) Explain the influence of relief on land uses in Switzerland. (6 marks)
- (c) State the challenges facing land uses in the Swiss Alps. (5 marks)
- (d) What measures should be taken to address the challenges identified in (c) above? (5 marks)

9. Study table III; showing German's exports and imports (2001) and answer the questions that follow:

| Type of Commodity          | Imports % | Exports % |
|----------------------------|-----------|-----------|
| Fuels                      | 08        | 01        |
| Agricultural raw materials | 02        | 01        |
| Manufactured foods         | 70        | 89        |
| Food                       | 07        | 04        |
| Ores and Metals            | 03        | 02        |
| Others                     | 10        | 03        |

**Table III**

- (a) Draw a pie chart showing German's imports in 2001. (9 marks)
- (b) State the conditions which have influenced the volume of German's exports. (5 marks)
- (c) Describe the factors which have favoured the development of the manufacturing sector in Germany. (8 marks)
- (d) Outline the problems facing German's manufacturing sector. (3 marks)

10. Study table IV; showing land use in the Netherlands and answer the questions that follow:

| Land use type     | Land area (000's acres) |
|-------------------|-------------------------|
| Pastures          | 1,505                   |
| Arable            | 770                     |
| Horticulture      | 140                     |
| Wood + Waste Land | 419                     |
| Others            | 600                     |

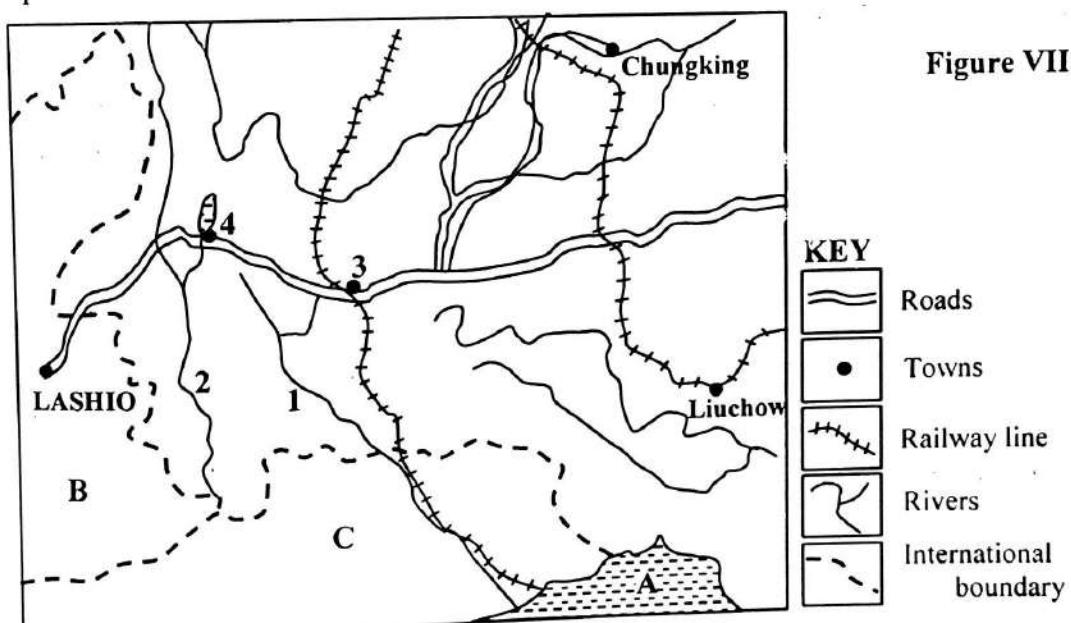
**Table IV**

- (a) Draw a bar graph to show the land use types in the Netherlands. (8 marks)
- (b) Describe the factors that have favoured agriculture in the Netherlands. (8 marks)
- (c) State the challenges facing agriculture in the Netherlands. (5 marks)
- (d) What changes have been carried out to improve agriculture in the Netherlands? (4 marks)

### REGION III – CHINA

*Answer one question.*

11. Study figure VII; sketch map showing the Yunnan region of China and answer the questions that follow:



- (a) Name:
  - (i) Gulf marked A.
  - (ii) Countries B and C.
  - (iii) Rivers 1 and 2.
  - (iv) Towns 3 and 4.(7 marks)
- (b) State the human activities taking place in the Yunnan region. (5 marks)
- (c) Explain the problems facing people living in the Yunnan region. (8 marks)
- (d) What changes are being taken to develop the Yunnan region of China? (5 marks)

**Turn Over**

12. Study table V: showing China's copper production (1975-95) in 000's metric tonnes.

| Year | Copper production(000's) metric tonnes |
|------|--|
| 1975 | 100                                    |
| 1980 | 115                                    |
| 1985 | 185                                    |
| 1990 | 375                                    |
| 1995 | 370                                    |

Table V

- (a) Calculate the percentage change in copper production between 1975- 95. (2 marks)
- (b) Draw a line graph to show the trend of copper production. (8 marks)
- (c) (i) Describe the trend of copper production in C(i) China. (3 marks)
  - (ii) State the cause of the trend identified in C(i) above. (4 marks)
- (d) Explain the challenges facing copper mining in China. (8 marks)

13. Study figure VIII: Sketch map of the site of Hong Kong port and answer the questions that follow:

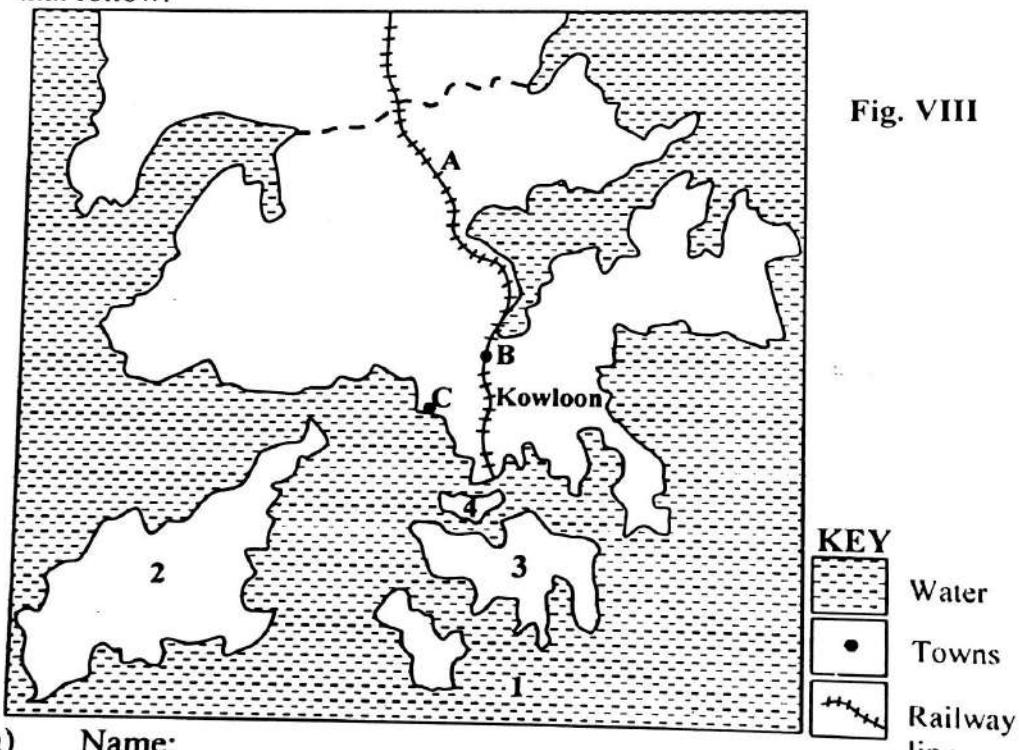


Fig. VIII

- a) Name;
  - (i) Water body 1.
  - (ii) Islands 2, 3, and 4
  - (iii) Railway line A.
  - (iv) Town B and C.
- b) Describe the physical factors that favoured development of Hong- Kong as a port. (7 marks)
- c) State the negative effects of the development of Hong-Kong port on the environment. (8 marks)
- d) What measures have been taken to improve Hong-Kong port? (5 marks) (5 marks)

END

Name: .....

Centre/Index No: .....

School.....

Signature.....

**112/2  
ENGLISH LANGUAGE  
PAPER 2  
July/August**

**2 hours**



**WAKISSHA JOINT MOCK EXAMINATIONS**

**Uganda Certificate of Education**

**ENGLISH LANGUAGE**

**SUMMARY, COMPREHENSION AND GRAMMAR**

**Paper 2**

**2 hours**

**INSTRUCTIONS TO CANDIDATES:**

- *All questions are to be answered.*
- *All your answers must be written on this question paper.*

*For examiner's use only*

| Question | 1 | 2A | 2B | 3A | 3B | Total |
|----------|---|----|----|----|----|-------|
| Marks    |   |    |    |    |    |       |

**1. Read the passage below and answer the questions that follows it.**

Nearly half of the children born to married parents in this country go through a divorce experience before they are eighteen—about one million children each year. For these children, even more than for their parents, divorce can be an extraordinarily difficult experience. For adults, a divorce may offer advantages - pursuit of a new career, a new hobby, a new spouse, or a new lover. For them, the divorce, although painful, can be a net gain. But children see no benefit in divorce. The end of their parents' marriage is a complete loss, turning their lives upside down.

Reactions vary with age, but across the board, children experience feelings of confusion and betrayal as they watch their family fall apart and feel neglected while their parents struggle with their own problems. They just wish their parents would get back together and shape up. But, beyond these initial reactions, how much does divorce affect children in the long run? Do they suffer permanent psychological and physical problems? Do they have trouble in school? Are they “victims” of the breakup in the same way some adults are? This issue of how much and how divorce affects children's well-being has attracted a lot of attention from researchers. A computer search of books and articles in the database PsycINFO reveals more than four thousand on the topic of “children of divorce”—half of them in the past decade.

The main goal of research on children of divorce has been to compare the functioning of these children with that of children in intact, two parent families. These comparisons provide ample evidence that children from divorced families have more behavioral, emotional, health, and academic problems. As we will see, the differences are not large and they are not necessarily permanent; nor are all children affected equally. But the differences are consistent across studies and statistically significant. Compared with children in intact families, children from divorced families are more likely to have conduct problems and show signs of psychological maladjustment: they have lower academic achievement, more social difficulties, and poorer self-esteem.

Researchers have also discovered that there are more subtle costs for children when they have to cope with their parents' divorce, costs that do not necessarily show up on standard tests of achievement, behavior, or health. These emotional costs include embarrassment, fear of abandonment, grief over loss, irrational hope of reconciliation, worry about their parents' well-being, anxiety about divided loyalties, and uncertainty about romantic relationships. In the early years after their parents' divorce, all children feel sad and almost all feel angry, and these feelings do not disappear easily. In one study of college students, researchers found that those who had experienced their parents' divorce reported distressing feelings, beliefs, and experiences. These were resilient young people and the divorce had occurred years earlier, but still they harbored painful feelings.

Children who are a little older are likely to find divorce bewildering. These preschool-age children don't understand what is going on. They don't know what the words “separation” and “divorce” mean. They don't understand why Daddy is leaving, why Mommy is crying. They are confused because they conceptualize a relationship only in terms of the person's physical presence. For them, love is being with the person. At this age children are frightened when the parent leaves, afraid of being left alone, anxious about being abandoned. If Daddy has left, who is to say that Mommy won't stop loving them and leave too? They are afraid about who will take care of them if Mommy does leave. Compared with older or younger children, these children are most distressed and upset, most vulnerable to feelings of loss and rejection. They have the most intense reaction to parents' separation of any age group.

*Source: Divorce : Causes and Consequences, Clarke-Stewart, Alison, (2006)*

## Question

In about 130 words summarise the effects of divorce on children.

## SUMMARY

ROUGH COPY

FAIR COPY

|                      |  |
|----------------------|--|
| Total marks for Q. 1 |  |
|----------------------|--|

2. A. Read the following passage and then answer the questions that follow.

THE **modern problem** of smoking primarily concerns the children. We adults must make up our own mind. What we did at first in ignorance, and later because of habit, does not now apply, as we now have more knowledge about smoking and we must not fail to use it for the younger generation. Those most in contact with children obviously have to make an effort not to smoke, or at least to explain their smoking to their children almost as an illness or habit. Children today are subjected to an environment where smoking is natural, **taken for granted**, and it is the non-smoker who is scorned and an outcast.

Clearly parents who smoke are **at a disadvantage in trying to restrain** their children. But nothing is lost if the smoking habits of older people can be linked to some specific period of strain or difficulty which can be explained to the children, instead of leaving them to think that smoking is as inevitable as eating, drinking and loving. It is not easy to convince children about the advantages of not smoking if they are used to seeing their parents with cigarettes, watch them offer cigarettes as a ritual to callers, give cigarettes for festive presents, see the relaxation of the evening grow around a pipe, experience the air of irritation when an adult gives up smoking. At the same time the parent may be beloved, adored, an example in all things. How, in this one matter, can faults in parents be suggested without the child losing all faith?

It is something if parents regrettfully explain their addiction - this is more use than just ordering them not to smoke. Without seeming mean, it is also possible to stop having boxes of cigarettes lying around to be offered automatically to visitors. If you make children believe that it is a part of good manners in society to always be pushing cigarettes at visitors, they automatically absorb this useless habit.

The teacher who feels guilty about his small pipe of tobacco might-well conclude that **any sacrifice is wasted on his part** as his pupils see every day newspaper headings and television commercials full of praise of various tobaccos or cigarettes. In newspaper photographs of famous personalities, or ordinary people suddenly in the news, the pipe or cigarette is often an automatic part of the picture. To suggest wealth the cigar appears. Famous people lend their names to exploitation by tobacco firms. Every effort is made by a clever and resourceful advertising industry to suggest that smoking has to do with romance, with confidence and success, with relaxation or with concentration, whichever suits. They use the idea that any man or woman without a cigarette is not properly dressed.

To stop children smoking is not an easy matter, but some start could be made. Strict rules against smoking may **increase its pleasures**, but the possibility of punishment in schools could help. The restriction of smoking in public places, for instance the cinema; the removal of all advertising and a period of publicity showing the hazards of cancer; a deliberate attempt by parents, teachers and doctors, and others, who may set an example – all these are needed, together with a general assault on air pollution. .

(From *The Common Sense of Smoking* by C. M. Fletcher)

**Answer questions 2.1 to 2.5 on the question paper.**

- 2.1 What is the main problem in the first paragraph that is to be dealt with in the passage?

.....  
.....

**Turn Over**

- 2.2. What excuse does the author suggest older people should give to children for their smoking?  
.....  
.....
- 2.3. What does "offering Cigarettes as a ritual for callers" mean?  
.....  
.....
- 2.4. To stop children thinking that smoking is necessary for entertaining guests, what does the author suggest?  
.....  
.....
- 2.5. Give the meaning of the following phrases as used in the extract.
- (i) modern problem  
.....
  - (ii) taken for granted  
.....
  - (iii) at a disadvantage in trying to restrain  
.....  
.....
  - (iv) any sacrifice is wasted in his part.  
.....  
.....
  - (v) Increase its pleasures.  
.....
- |                       |  |
|-----------------------|--|
| <b>Marks for Q.2A</b> |  |
|-----------------------|--|
- 2B. Read the following passage and answer the questions that follow.**
- Ochola learned from his friend that the steamer had been delayed for two hours. It would now leave Kisumu at noon. He was most disappointed. Nyapol already looked bored and this was going to make her even more resentful. Such delays were bad omens, particularly when you had a long journey ahead. A pile of cargo had just arrived by goods train and had to be loaded before the steamer left Kisumu. He thought it wise not to tell his wife what had happened.
- The wagon train stopped with a jolt and all eyes turned towards it. Within minutes, the wagon was surrounded by half-naked men, some of whom had quickly climbed on to it. Then a song broke out,
- 'Harambe! ee!  
'Harambe! ee!

The men had not finished uttering the words when one man stepped forward and bent below the wagon, his friends whisked the bag load and rested it on his back lengthwise. The man trotted pitifully with the load, towards the steamer. He hesitated on the pavement, bent to one side and the bag fell to the ground. The man straightened his back and ran back to the wagon.

The song continued several times as the men tottered along with the bags, which looked bigger than themselves. The contents might have been maize, millet, or groundnuts, each weighing up to two hundred pounds. Nyapol found it inconceivable that the same men she had watched trotting with heavy bags on their sweaty backs went back to the wagon laughing among themselves and grinning at the stupefied passengers. Once they were back at the wagon, they wasted no time before taking on another load. In fact, it looked as if they were competing to see who could carry the greatest number of bags.

It was not anger that made Nyapol's eyes sting with tears. It was pity. Though the men obviously looked happy and proud of their work she concluded that they had been bewitched-laughing under such conditions was lunacy.

When the men finally began to show signs of exhaustion, Nyapol lost her control and sat there, sobbing quietly. An hour must have passed. The sun was high in the sky and beat furiously upon the naked chests of the labourers. They were perspiring heavily and beads of sweat from their heads poured down their faces and mingled with those on their chest. Their worn-out backs were white-washed with dust from the bags, while their once protruding bellies were now sunken.

'Why waste your tears? The men have chosen the job themselves. They are neither slaves nor prisoners: they are just normal men who have come to town to earn money to buy things for their wives,' explained Ochola, seeing his wife looking at the labourers and weeping for them.

'Ridiculous! Only bewitched men could willingly choose such a job! A man whose wife is bewitched as well!'

Ochola tried to explain to his wife about contract jobs but she would not try to understand. He was not in a mood to argue; he soon kept quiet and let his wife recover on her own. Nyapol jumped as the giant steamer boomed a loud warning. She was so frightened that she stood up and gripped Ochola's hand. Ochola soothed her.

'That's the signal to tell us that we should go on board,' he explained. 'There will be another hooter to announce the departure of the steamer.'

**Answer question 2.6 to 2.10 by putting a ring  around the letter of the most correct answer.**

2.6 Ochola thought it wise not to tell his wife what had happened,

- A. because it would make her more annoyed.
- B. so that the time would seem to pass more quickly.
- C. because the late departure was a bad omen.
- D. because they had a long journey ahead of them.

2.7 The men began to sing,

- A. because they were happy.
- B. because they were unhappy.
- C. to get ready for work.
- D. so that they could climb quickly on to the wagon.

- 2.8 The man hesitated before he put the bag on the pavement.
- A. to make sure he put the bag in the right place.
  - B. because the bag was too heavy for him to carry further.
  - C. because it was difficult to stop with the load on his back.
  - D. because he was mounting the pavement.

- 2.9 From the passage we could guess that 'inconceivable' means:
- A. likely.
  - B. unlikely.
  - C. impossible.
  - D. amusing.

- 2.10 Nyapol concluded that the men had been bewitched because,
- A. they looked happy at their work.
  - B. they were proud of their work.
  - C. they were happy and proud at their work.
  - D. they were laughing.

|                     |  |
|---------------------|--|
| Marks for Q.2B      |  |
| Total marks for Q.2 |  |

3. A) Re-write each item in 3.1 to 3.10 according to the instructions. Do not change the meaning of the original sentence.

- 3.1 The referee declared the game a draw. (Rewrite in the passive)

.....  
.....

- 3.2 The parents did not know that their son had been dismissed from school. (Rewrite to use: ..... aware of .....)

.....  
.....

- 3.3 "I am the most brilliant student in the whole class;" Solomon said.  
(Begin: Solomon boasts .....)

.....  
.....

- 3.4 Wars are horrible. Mere words cannot describe them.  
(Join into one sentence using: ..... more .....)

.....  
.....

- 3.5 Although he worked hard to get the job, acute cholera attacked him soon after he had got it. (Rewrite using: ..... taken ill.....)

.....  
.....

- 3.6 If the kitchen staff went on strike, the students would be asked to prepare their own meals. (Begin: Should the kitchen staff.....)

.....  
.....

- 3.7 No one has succeeded in stopping corruption and killings. (Use:....failed to...)

.....  
.....

- 3.8 If my brother had not worked hard to educate me, I would have been a street boy. (Begin: But for ....)

.....  
.....

- 3.9 He was disgusted by her snoring. (Begin: What .....

.....  
.....

- 3.10 He carried only certain items. He considered such items essential for his journey. (Join the sentence using: "such" )

.....  
.....

|                 |  |
|-----------------|--|
| Marks for Q. 3A |  |
|-----------------|--|

- B) For items 3.11 to 3.20, choose the best of the four alternatives to complete the statements given. Put a ring  around the letter that corresponds with your best choice.

- 3.11 He was warned not to ..... his money.

- A. free
- B. un fasten
- C. loose
- D. lose

- 3.12 She climbed .....the ladder and cut ..... the wood.

- A. down-up
- B. on-up
- C. up-down
- D. up-up

**Turn Over**

- 3.13 I have told you.....I know.  
 A. all what  
 B. all which  
 C. all that  
 D. all along
- 3.14 I will marry.....I like.  
 A. whoever  
 B. whoever  
 C. whatever  
 D. whomsoever
- 3.15 Fortune always favored the rich and made.....richer.  
 A. them  
 B. us  
 C. her  
 D. him
- 3.16 Many students..... failed this term.  
 A. has  
 B. are  
 C. have  
 D. were
- 3.17 Once upon a time.....our cows.  
 A. there wear  
 B. their were  
 C. there were  
 D. there ware
- 3.18 Teachers often scold students for inattention.....their words.  
 A. in  
 B. through  
 C. with  
 D. about
- 3.19 Bread and butter.....his favourite food.  
 A. have been  
 B. were  
 C. is  
 D. are
- 3.20 New tools make child's play of formerly.....jobs.  
 A. bark-breaking  
 B. back breaking  
 C. back-broken  
 D. buck-breaking

|                            |  |
|----------------------------|--|
| <b>Marks for Q.3B</b>      |  |
| <b>Total marks for Q.3</b> |  |

**END**

**456/2**  
**MATHEMATICS**  
**PAPER 2**  
**July/August**  
**2½ hours**



**WAKISSHA JOINT MOCK EXAMINATIONS**

**Uganda Certificate of Education**

**MATHEMATICS**

**Paper 2**

**2hours 30 minutes**

**INSTRUCTIONS TO CANDIDATES:**

- *Answer all questions in section A and any five questions from section B.*
- *Any additional question(s) answered will not be marked.*
- *All necessary calculations must be done in the same answer booklet/sheets provided, with the rest of the answers. Therefore no paper should be given for rough work.*
- *Graph paper is provided.*
- *Silent non-programmable scientific calculators and mathematical tables with a list of formulae may be used.*

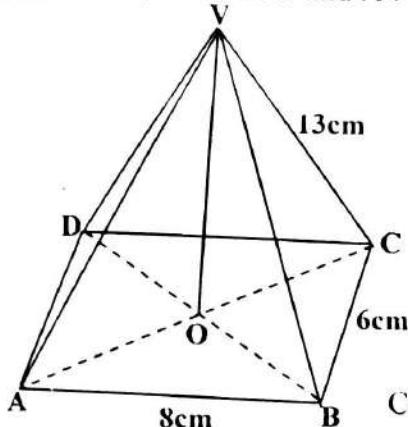
## SECTION A (40 marks)

*Answer all questions in this section*

1. Without using tables or calculator evaluate;  $(25)^{\frac{1}{6}} \times (200)^{\frac{1}{3}}$ . (04 marks)
2. In a class of 30 students, 6 like neither mathematics (M) nor physics (P). 9 like P but not M and 7 like M but not P. How many students;
  - (i) like physics or mathematics? (02 marks)
  - (ii) dislike mathematics? (02 marks)
3. Given that,  $g(x) = \frac{x}{y} + 5$ , find the value of y for which  $g^{-1}(8) = 6$ . (04 marks)
4. A straight line with a gradient  $-\frac{1}{2}$  passes through the points (6, k) and (k, -4), find the;
  - (i) value of k.
  - (ii) equation of the line. (04marks)
5. Given that vectors  $\overrightarrow{PQ} = \begin{pmatrix} 6 \\ -1 \end{pmatrix}$ ,  $\overrightarrow{OQ} = \begin{pmatrix} 2 \\ 3 \end{pmatrix}$  and  $\overrightarrow{OR} = \begin{pmatrix} 1 \\ 7 \end{pmatrix}$ , find the;
  - (i) vector  $\overrightarrow{PR}$ . (02marks)
  - (ii) length of  $\overrightarrow{PR}$  to 3sf. (02marks)
6. In the diagram below, the lines  $y = 2x$  and  $x + y = 9$  intersect at point Q.
 

Determine the coordinates of P, Q and R. (04marks)
7. A customer deposited a certain amount of money in a bank that pays simple interest of r %. After 3 years the total amount of money on his account was Ugx. 358,400. If the interest earned each year was Ugx. 12,800. Calculate the;
  - (a) amount deposited.
  - (b) annual interest, r %. (04marks)
8. Okello travelled a journey of 132km partly by bus and partly by motorcycle. After travelling 105km at an average speed of 42km/hr by bus, he jumped on a boda motorcycle that travelled at 54km/hr for the remaining journey. What was Okello's average speed for the whole journey? (04marks)
9. Find the lowest common multiple (LCM) of the set of numbers: 10, 12 and 15. (04marks)

10. The figure below is a right pyramid ABCDV with a rectangular base ABCD with  $AB = 8\text{cm}$ ,  $BC = 6\text{cm}$  and  $AV = BV = CV = DV = 13\text{cm}$ .



Calculate the perpendicular height of the pyramid. (04marks)

### SECTION B (60 marks)

*Attempt any five questions from this section. All questions carry equal marks.*

11. (a) A map has a scale of  $1:n$ . The area of a forest cover on the map is  $13\text{cm}^2$ . If the actual area of the forest is  $81.25\text{km}^2$  determine the value of  $n$ . (05 marks)
- (b) A quantity  $y$  is partly constant and partly varies as the square of  $x$ . When  $y = 51$ ,  $x = 3$  and when  $y = 2.25$ ,  $x = 0.5$ .
- (i) form an equation relating  $y$  and  $x$ . (04 marks)
- (ii) find  $y$  when  $x = 2$ . Round your answer to two decimal places. (03 marks)
12. Given that the function:  $g(x) = \frac{a}{x} + b$ . If  $g(-1) = 1\frac{1}{2}$  and  $g(2) = 9$ , determine the value(s) of;
- (a) (i)  $a$  and  $b$ . (06 marks)
- (ii)  $x$  for which  $g(x) = 0$ . (02 marks)
- (b) Evaluate  $g^{-1}(6)$ . (04 marks)

13. In an organization, the following allowances are not taxed; medical Ugx 720,000 per annum, Electricity Ugx 40,000 per month. Transport Ugx 2,500 per day and housing 90% of the monthly medical allowance. The tax structure below applies to all employees on their taxable income.

| Taxable income (Ugx) | Rate (%) |
|----------------------|----------|
| 00,000 - 80,000      | 2.0      |
| 80,001 - 190,000     | 5.0      |
| 190,001 - 280,000    | 7.5      |
| 280,001 - 380,000    | 12.0     |
| 380,001 - 490,000    | 15.0     |
| Above 490,000        | 20.0     |

If an employee paid a monthly income tax of Ugx 125,350 in the month of June 2018, calculate his/her;

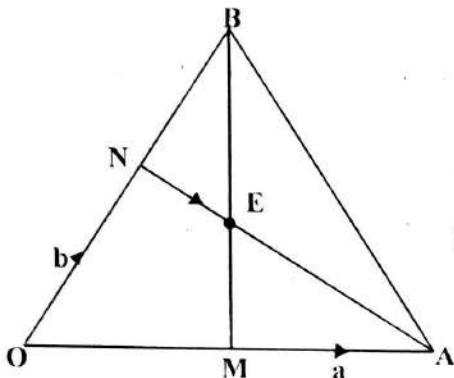
- (a) taxable income. (08 marks)
- (b) monthly gross income. (02 marks)
- (c) net monthly income. (02 marks)
14. From a certain school a random sample of 50 students was selected. It was found out that in this sample, 38 students like Fanta (F), 32 students like Mirinda (M) and 24 students like

Pepsi cola (P). Eight students like neither of the drinks. All those students who like Pepsi cola also like Mirinda and 21 students like all the three drinks.

- (a) Represent the above information on a neat venn diagram. (04 marks)
- (b) How many students like: (i) Fanta and Mirinda? (ii) One type of drink only? (06 marks)

- (c) Find the probability that a student chosen at random from the group likes at most one of the drinks. (02 marks)

15. In the diagram below,  $\overrightarrow{OA} = \mathbf{a}$ ,  $\overrightarrow{OB} = \mathbf{b}$ . M is the mid-point of  $\overrightarrow{OA}$ . Point N is on  $\overrightarrow{OB}$  such that  $3ON = 2NB$ . MB and NA meet at E such that  $ME = hMB$  and  $NE = kNA$ .



- (a) Express in terms of  $\mathbf{a}$  and  $\mathbf{b}$  the vectors:

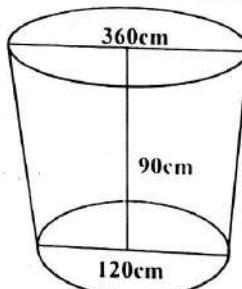
- (i)  $\overrightarrow{AN}$   
(ii)  $\overrightarrow{BM}$

(04 marks)

- (b) Express the vector  $\overrightarrow{ME}$  in terms of; (i)  $\mathbf{a}$ ,  $\mathbf{b}$  and  $h$ .  
(ii)  $\mathbf{a}$ ,  $\mathbf{b}$  and  $k$ .

Hence find the values of the scalars  $h$  and  $k$ . (08 marks)

16. (a) The volumes of two similar cylinders are  $4752\text{cm}^3$  and  $1408\text{cm}^3$ . If the area of the curved surface of the smaller cylinder is  $352\text{cm}^2$ , calculate the area of the curved surface of the larger cylinder. (05 marks)
- (b) The figure below shows a bucket filled with water to the brim which was cut from a cone. The height of the bucket is 90cm, its base diameter is 120cm and its top diameter is 360cm.



Using  $\pi = 3.14$ , Find the capacity of the bucket in litres. (07 marks)

17. Towns P and Q are 160kms apart. A lorry left town P at 6:15am and travelled towards town Q at a steady speed of 20km/hr. A bus left town Q at 6:45am and travelled towards town P at a steady speed of 40km/hr. Using a scale of 2cm: 20kms and 2cm : 1 hour,

- (a) Draw distance time graphs showing journeys of the two vehicles. (06 marks)
- (b) Using your graphs estimate the; (i) distance from town Q where the lorry by passes the bus.  
(ii) time at which the two vehicles bypass one another.
- (c) Calculate the difference in their time of arrival to respective destinations. (03 marks)
- (03 marks)

END

Name..... Signature.....

School..... Index No.....

**527/2**

**PRINCIPLES  
AND PRACTICES  
OF AGRICULTURE**

**(Practical)**

**Paper 2**

**July/August**

**2 hours**



## **WAKISSHA JOINT MOCK EXAMINATIONS**

**Uganda Certificate of Education**

**PRINCIPLES AND PRACTICES OF AGRICULTURE**

**Paper 2**

**2 hours**

### **INSTRUCTIONS TO CANDIDATES:**

- Answer all questions.*
- All answers should be written in the spaces provided.*

| <b>FOR EXAMINER'S USE ONLY</b> |              |                       |
|--------------------------------|--------------|-----------------------|
| <b>QUESTION</b>                | <b>MARKS</b> | <b>EXAMINER'S No.</b> |
| 1                              |              |                       |
| 2                              |              |                       |
| 3                              |              |                       |
| 4                              |              |                       |
| 5                              |              |                       |
| <b>TOTAL</b>                   |              |                       |

1. Using wetted fingers, feel samples F and G between your fingers alternatively.  
(a) State your observation. (2 marks)

F

.....

G

.....

- (b) State two physical properties and two chemical properties of; (8 marks)  
**F – Physical Properties**

.....

.....

**Chemical Properties**

.....

.....

**G – Physical Properties**

.....

.....

**Chemical Properties**

.....

.....

2. Specimens P and Q are used in construction of a farm building.

- (a) Name the materials used to make; (4 marks)  
**P**

.....

.....

.....

- (b) State the advantages and disadvantages of using specimen Q; (6 marks)  
Advantages:

.....

.....

.....

.....

Disadvantages:

.....  
.....  
.....  
.....

3. Specimen R is a system got from a domestic fowl.

(1 mark)

(a) Name the specimen.

.....

(b) Draw a well labeled diagram of specimen R. (4 marks)

.....

(c) State the function for each of the parts labelled R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, and R<sub>4</sub>. (4 marks)

R<sub>1</sub>

.....  
.....  
.....

R<sub>2</sub>

.....  
.....  
.....

R<sub>3</sub>

.....  
.....  
.....

R<sub>4</sub>

.....  
.....  
.....

**Turn Over**

- (d) What is the importance of the system named in 3(a) to the fowl? (2 marks)
- .....  
.....  
.....
4. Specimens **A** is a mature crop plant affected by a disease. Observe it carefully and answer the questions below: (3 marks)
- (a) Describe the defects on Specimen **A**.
- .....  
.....  
.....
- (b) What is the causal organism responsible for the defects observed in **A**? (1 mark)
- .....  
.....
- (c) Suggest **four** measures that can be taken to reduce the problem observed on **A** in the field. (4 marks)
- .....  
.....  
.....  
.....
- (d) Name **two** other crops which may be affected by the problem similar to **A**. (2 mark)
- .....  
.....
5. Specimens **S** and **T** are parts of a tractor. Observe them and answer the following questions:
- (a) Name the system to which they belong. (1 mark)
- .....
- (b) State **one** functional similarity of the specimens. (1 mark)
- .....
- (c) State **one** feature that enables each specimen to perform its function. (2 marks)  
**S**
- .....  
.....
- T**
- .....  
.....
- (d) How would you care and maintain specimen **S** to ensure it functions effectively? (6 mark)
- .....  
.....  
.....

**END**

273/2  
**GEOGRAPHY**  
**Paper 2**  
**July/August**  
**2½ hours**



**WAKISSHA JOINT MOCK EXAMINATIONS**

**Uganda Certificate of Education**

**GEOGRAPHY**

**Paper 2**

**2 hours 30 minutes**

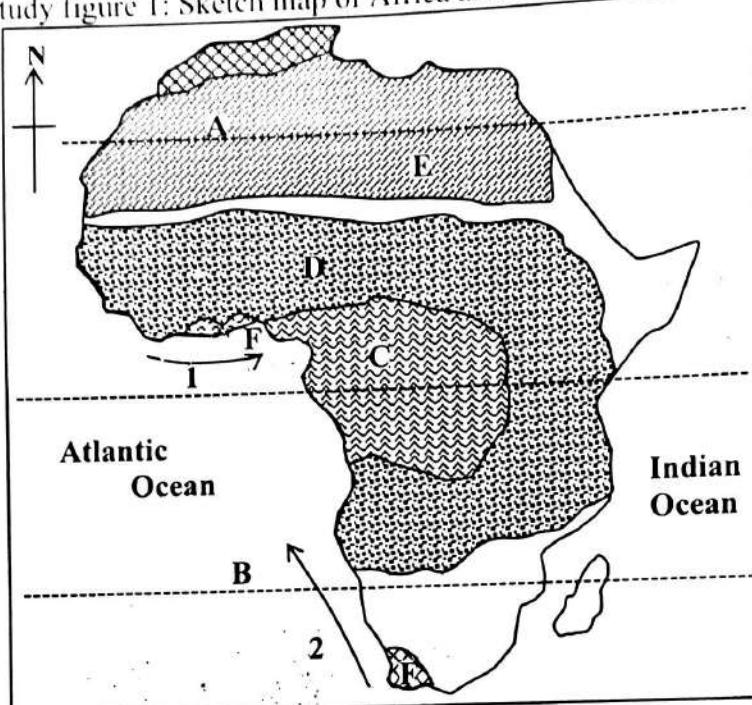
**INSTRUCTIONS TO CANDIDATES:**

- *Answer four questions only.*
- *Choose two questions from part I and two questions from part II.*
- *In part II only one question should be chosen from any one region.*
- *Any additional question(s) answered will not be marked.*

## PART I : THE REST OF AFRICA

*Answer two questions only from this part.*

1. Study figure 1: Sketch map of Africa and answer the questions that follow:



**Fig. 1**

|            |                                |
|------------|--------------------------------|
| <b>KEY</b> | Rainfall over 2000mm           |
|            | Rainfall between 1000 – 2000mm |
|            | Rainfall less than 500mm       |

- (a) Name:  
 (i) Ocean currents 1 and 2.  
 (ii) Latitudes A and B.  
 (iii) Climatic regions C, D and E.  
 (iv) Gulf marked F. (8 marks)
- (b) State the conditions leading to;  
 (i) High mean annual rainfall in Area C.  
 (ii) Low mean annual rainfall in Area E. (8marks)
- (c) Explain how rainfall amounts influence human activities carried out in region C. (5 marks)
- (d) State the negative effects of rainfall amounts on activities identified in (c) above. (4 marks)

2. Study table I; showing land under permanent crops for selected African countries and answer the questions that follow:

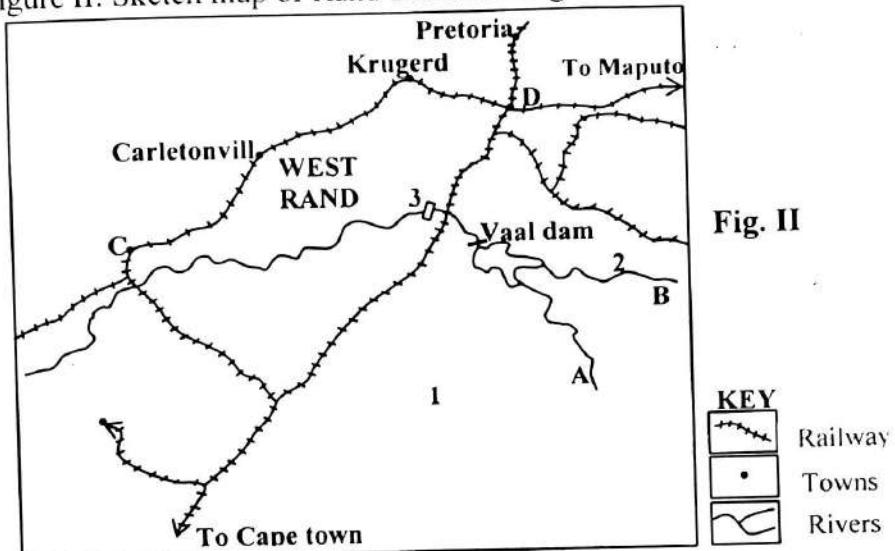
**Table 1**

| Country                      | Area under permanent crops(000's) hectares |
|------------------------------|--|
| Democratic Republic of Congo | 6700                                       |
| Ethiopia                     | 10,000                                     |
| Nigeria                      | 28,200                                     |
| Swaziland                    | 178  |
| Zambia                       | 5260                                       |
| Total                        | 50,338                                     |

*Source: African development indicators: Pg 231.*

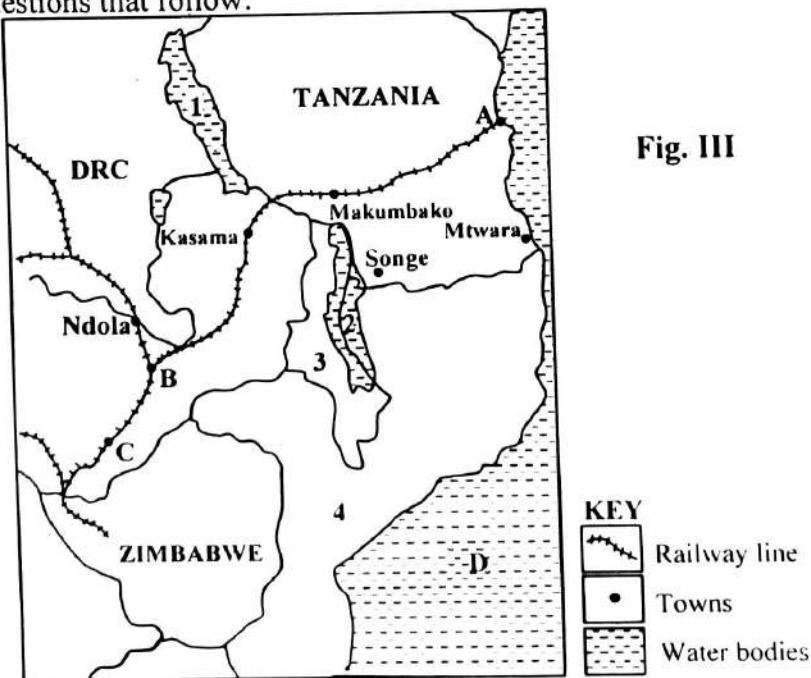
- (a) Draw a pie chart to show the information in the table. (8 marks)  
 (b) Name any two crops grown in any one selected African country. (3 marks)

- (c) Describe the conditions that have favoured the growth of permanent crops in selected African countries. (8 marks)
- (d) Explain the benefits of keeping land under permanent crops. (6 marks)
3. Study figure II: Sketch map of Rand Industrial region and answer the questions that follow:



- (a) Name;
- Rivers A and B.
  - States 1 and 2.
  - Industrial centres C and D.
  - Feature 3.
- (7 marks)
- (b) Giving specific examples, describe the conditions for location of industries in South Africa. (8 marks)
- (c) Explain the environmental problems resulting from industrial growth in South Africa. (6 marks)
- (d) What changes should be taken to improve the industrial sector in South Africa? (4 marks)

4. Study figure III; Sketch map showing distribution of the railway system and answer the questions that follow:



- (a) Name:
- Towns A, B and C.
  - Lakes: 1 and 2.
  - Countries 3 and 4.
  - Water body D.
- (8 marks)
- (b) Giving specific examples, describe the factors that have led to the distribution of the railway network in that part of Africa. (8 marks)
- (c) Explain the role of transport in the development of Africa. (5 marks)
- (d) Outline the problems facing the transport sector in Africa. (4 marks)

## PART II: STUDIES IN DEVELOPMENT

*Answer two questions from in this part.*

### REGION I: NORTH AMERICA

*Answer one question*

5. Study figure IV; Sketch map of New York and answer the questions that follow.

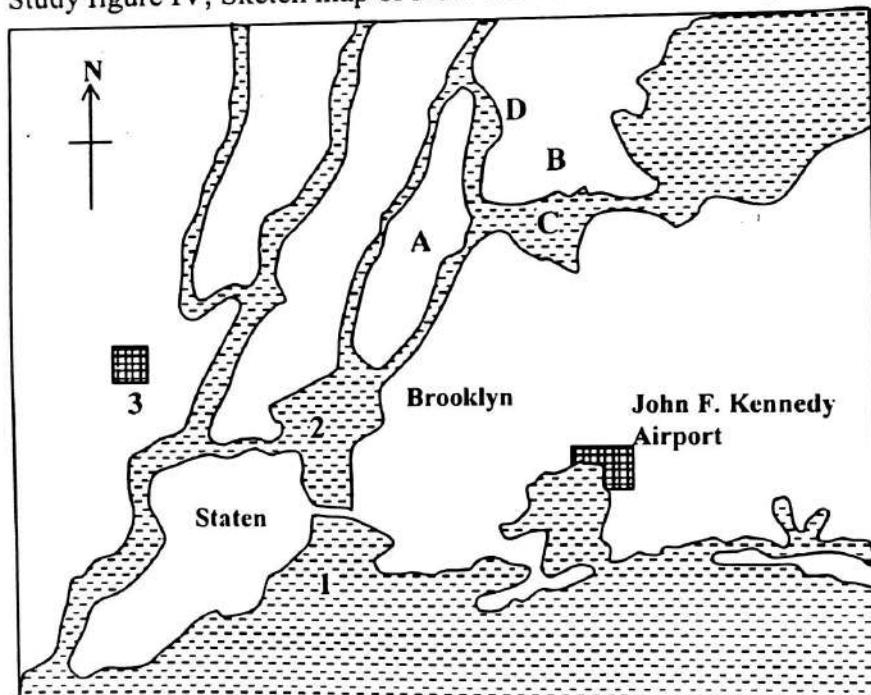
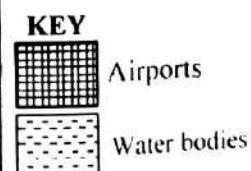


Fig. IV



- (a) Name:
- Island A and B.
  - Bays 1 and 2.
  - Rivers C and D.
  - Airport 3.
- (7 marks)
- (b) Describe the physical conditions that led to the establishment of New York port. (8 marks)
- (c) State the importance of New York port to the development of U.S.A. (6 marks)
- (d) Outline the problems facing New York port. (4 marks)

6. Study table II: showing cargo entering the great lakes region and answer the questions that follow.

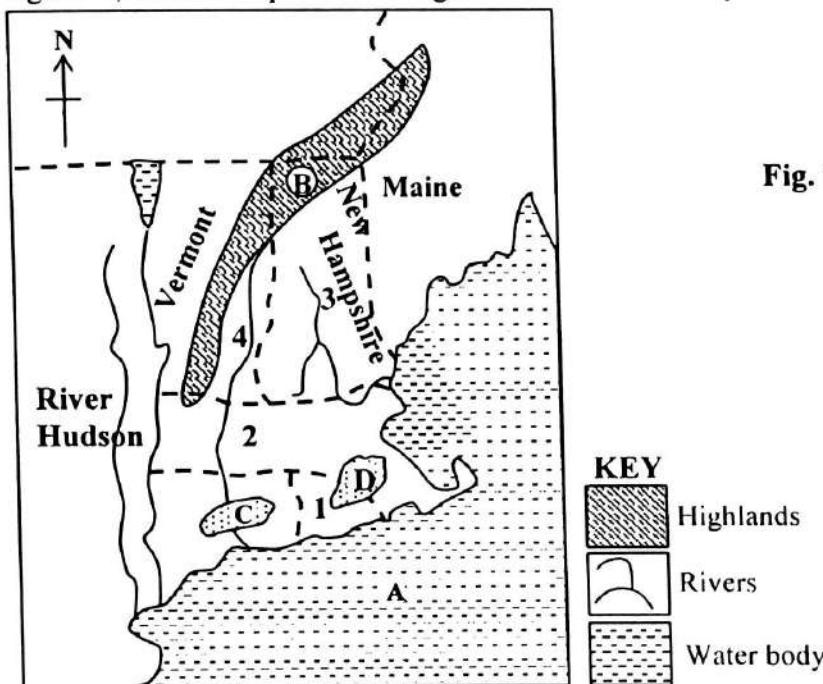
| Types of cargo | Montreal-L. Ontario section | Welland canal |
|----------------|-----------------------------|---------------|
| Iron ore       | 22,700                      | 16,000        |
| Iron and steel | 6,000                       | 670           |
| Others         | 9,300                       | 7,300         |

**Table II**

*Young and Lowry Pg 195.*

- (a) Calculate the percentage of cargo reaching the Welland canal from Montreal. (6 marks)
- (b) Describe the conditions that have led to the development of Iron and steel industries in the region. (8 marks)
- (c) Explain the negative effects of industrial development in the region. (6 marks)
- (d) State the changes that should be taken to reduce the effects of industrial growth in the region. (5 marks)

7. Study figure V; Sketch map of New England and answer the questions that follow:



**Fig. V**

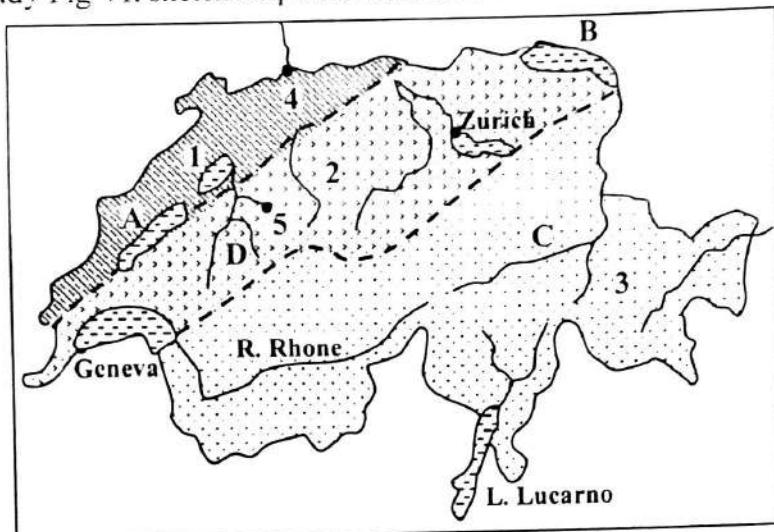
- (a) Name;
- States 1 and 2.
  - Rivers 3 and 4.
  - Water body A.
  - Highland B.
  - Major crops grown in areas C and D
- (8 marks)
- (b) Describe the factors that have favoured Agriculture in New England. (8 marks)
- (c) State the contributions of the Agricultural sector to New England. (5 marks)
- (d) What steps have been taken to improve agriculture in New England? (4 marks)

**Turn Over**

## REGION II: RHINELANDS

Answer one question

8. Study Fig VI: sketch map of Switzerland and answer the questions that follow:



**Figure VI**

| KEY       | Water bodies |
|-----------|--------------|
| ●         | Towns        |
| wavy line | Rivers       |

- (a) Name;
- (i) Physical regions 1, 2, and 3.
  - (ii) Lakes A and B.
  - (iii) Rivers C and D.
  - (iv) Towns 4 and 5.
- (9 marks)
- (b) Explain the influence of relief on land uses in Switzerland. (6 marks)
- (c) State the challenges facing land uses in the Swiss Alps. (5 marks)
- (d) What measures should be taken to address the challenges identified in (c) above? (5 marks)

9. Study table III; showing German's exports and imports (2001) and answer the questions that follow:

| Type of Commodity          | Imports % | Exports % |
|----------------------------|-----------|-----------|
| Fuels                      | 08        | 01        |
| Agricultural raw materials | 02        | 01        |
| Manufactured foods         | 70        | 89        |
| Food                       | 07        | 04        |
| Ores and Metals            | 03        | 02        |
| Others                     | 10        | 03        |

**Table III**

- (a) Draw a pie chart showing German's imports in 2001. (9 marks)
- (b) State the conditions which have influenced the volume of German's exports. (5 marks)
- (c) Describe the factors which have favoured the development of the manufacturing sector in Germany. (8 marks)
- (d) Outline the problems facing German's manufacturing sector. (3 marks)

10. Study table IV; showing land use in the Netherlands and answer the questions that follow:

| Land use type     | Land area (000's acres) |
|-------------------|-------------------------|
| Pastures          | 1,505                   |
| Arable            | 770                     |
| Horticulture      | 140                     |
| Wood + Waste Land | 419                     |
| Others            | 600                     |

Table IV

- (a) Draw a bar graph to show the land use types in the Netherlands. (8 marks)
- (b) Describe the factors that have favoured agriculture in the Netherlands. (8 marks)
- (c) State the challenges facing agriculture in the Netherlands. (5 marks)
- (d) What changes have been carried out to improve agriculture in the Netherlands? (4 marks)

### REGION III – CHINA

*Answer one question.*

11. Study figure VII; sketch map showing the Yunnan region of China and answer the questions that follow:

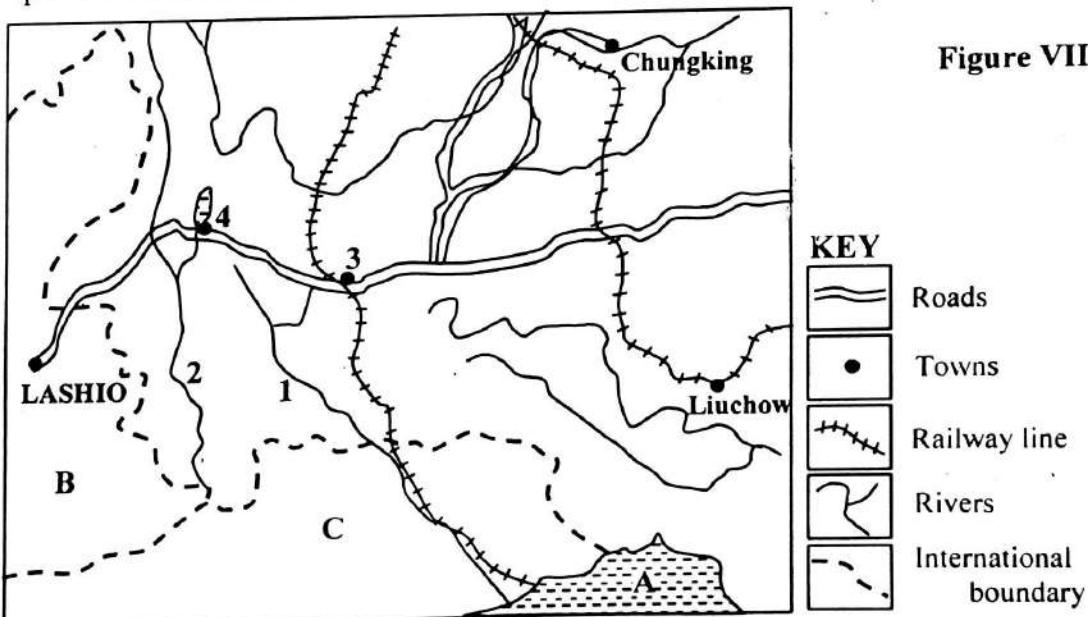


Figure VII

- (a) Name:
  - (i) Gulf marked A.
  - (ii) Countries B and C.
  - (iii) Rivers 1 and 2.
  - (iv) Towns 3 and 4.(7 marks)
- (b) State the human activities taking place in the Yunnan region. (5 marks)
- (c) Explain the problems facing people living in the Yunnan region. (8 marks)
- (d) What changes are being taken to develop the Yunnan region of China? (5 marks)

**Turn Over**

12. Study table V: showing China's copper production (1975-95) in 000's metric tonnes.

| Year | Copper production(000's) metric tonnes |
|------|--|
| 1975 | 100                                    |
| 1980 | 115                                    |
| 1985 | 185                                    |
| 1990 | 375                                    |
| 1995 | 370                                    |

Table V

- (a) Calculate the percentage change in copper production between 1975- 95. (2 marks)
- (b) Draw a line graph to show the trend of copper production. (8 marks)
- (c) (i) Describe the trend of copper production in C(i) China. (3 marks)
- (ii) State the cause of the trend identified in C(i) above. (4 marks)
- (d) Explain the challenges facing copper mining in China. (8 marks)

13. Study figure VIII: Sketch map of the site of Hong Kong port and answer the questions that follow:

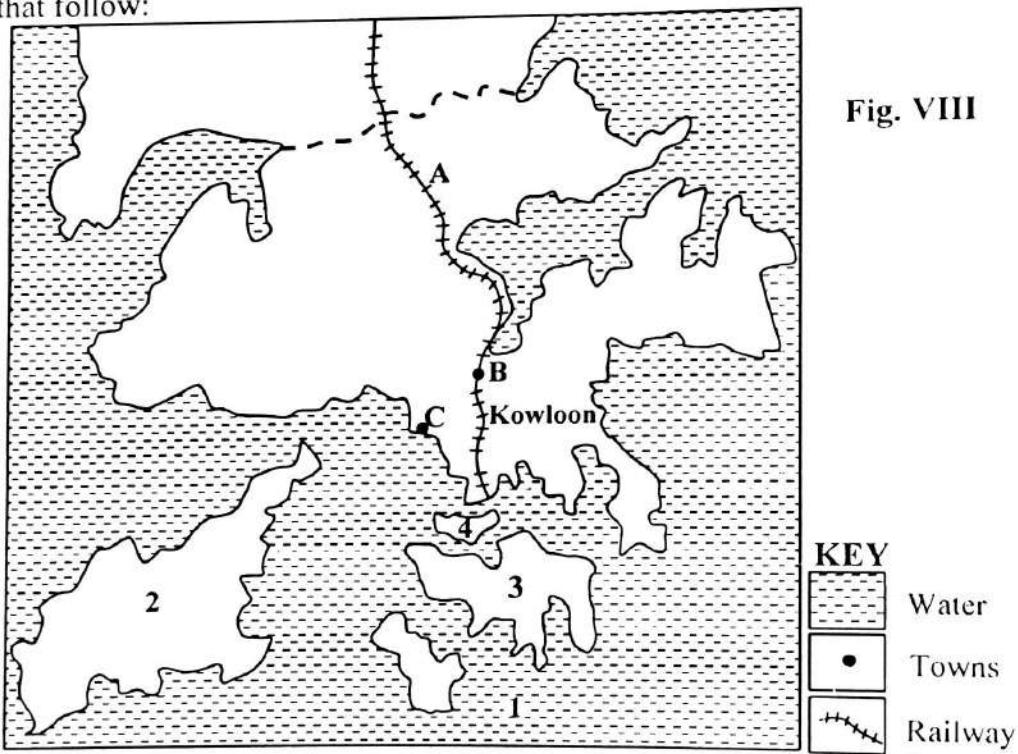


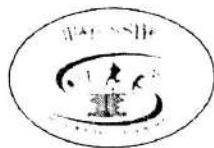
Fig. VIII

- a) Name;
- (i) Water body 1.
  - (ii) Islands 2, 3, and 4
  - (iii) Railway line A.
  - (iv) Town B and C.
- b) Describe the physical factors that favoured development of Hong-Kong as a port. (7 marks)
- c) State the negative effects of the development of Hong-Kong port on the environment. (8 marks)
- d) What measures have been taken to improve Hong-Kong port? (5 marks) (5 marks)

END

**241/1**  
**HISTORY OF**  
**EAST AFRICA**

**Paper 1**  
**July/August**  
**2 hours**



**WAKISSHA JOINT MOCK EXAMINATIONS**

**Uganda Certificate of Education**

**History of East Africa**

**(c. 1000 to independence)**

**Paper 1**

**2 hours**

**INSTRUCTIONS TO CANDIDATES:**

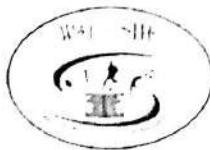
- *Answer four questions only.*
- *Any additional question(s) answered will not be marked.*
- *All questions carry equal marks.*
- *Use relevant examples, illustrations and maps where applicable.*

1. a) Describe the migration and settlement of the Western Bantu people into East Africa between 1000 and 1500. (13 marks)
- b) What were the effects of their settlement in East Africa? (12 marks)
2. a) What were the origins of Buganda kingdom? (12 marks)
- b) Explain the factors that led to the expansion of Buganda by the 19<sup>th</sup> century. (13 marks)
3. a) Describe the Portuguese conquest of the East Africa coast up to 1510. (13 marks)
- b) Why were the coastal people easily conquered by the Portuguese? (12 marks)
4. a) What were the reasons for the development of long distance trade in East Africa? (13 marks)
- b) How did this trade affects the people of East Africa? (12 marks)
5. a) Explain the role of Christian missionaries in the colonization of East Africa? (12 marks)
- b) What challenges were faced by missionaries in East Africa? (13 marks)
6. a) Why were European interested in colonizing East Africa during the 19<sup>th</sup> century? (12 marks)
- b) How did the colonization process affect the people of East Africa? (13 marks)
7. a) Why was the 1900 Buganda Agreement signed? (12 marks)
- b) How did the terms of the Agreement affect the people of Uganda up to independence? (13 marks)
8. a) Why did the British adopt the system of indirect rule in Uganda? (12 marks)
- b) Describe how the system worked in Uganda. (13 marks)
9. a) What led to the signing of the Devonshire white paper of 1923 in Kenya? (15marks)
- b) Explain the terms of the Devonshire white paper. (10 marks)
10. a) What led to the outbreak of the MAUMAU rebellion? (13 marks)
- b) In what ways did this rebellion affect the history of Kenya? (12 marks)

**END**

**241/4**  
**HISTORY OF**  
**SOUTH AFRICA**

**Paper 4**  
**July/August**  
**2 hours**



**WAKISSHA JOINT MOCK EXAMINATIONS**

**Uganda Certificate of Education**

**HISTORY OF SOUTH AFRICA**

**(c.1000 to independence)**

**Paper 4**

**2 hours**

**INSTRUCTIONS TO CANDIDATES:**

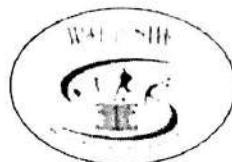
- *Answer four questions only.*
- *Any additional question(s) answered will not be marked.*
- *All questions carry equal marks.*

1. (a) Describe the migration and settlement of the Hottentots in South Africa before 1800. (12 marks)
- (b) How were they organized before the coming of the Bantu? (13 marks)
  
2. (a) How did the Dutch establish their Colony at the Cape? (12 marks)
- (b) What challenges did the Early Dutch settlers face at cape between 1652 and 1795. (13 marks)
  
3. (a) Explain the origins of the Basuto state. (12 marks)
- (b) Describe the importance of King Mosheshe in the history of Basuto land between 1820-1870 (13 marks)
  
4. (a) Why did the missionaries come to South Africa? (13 marks)
- (b) How did the Dutch reformed church promote Apartheid? (12 marks)
  
5. (a) Explain the causes of the war between the Zulu and the British in 1879. (13 marks)
- (b) How did this war affect the people of South Africa? (12 marks)
  
6. Describe the roles of the following in the history of South Africa.
  - (a) Cecil Rhodes. (12 marks)
  - (b) Paul Kruger. (13 marks)
  
7. (a) Why was the policy of Separate development introduced to South Africa? (13 marks)
- (b) How did this policy affect the people of South Africa? (12 marks)
  
8. (a) What were the causes of the Soweto uprising of 1976? (12 marks)
- (b) How did the uprising affect the people of South Africa? (13 marks)

**END**

**241/4**  
**HISTORY OF**  
**SOUTH AFRICA**

**Paper 4**  
**July/August**  
**2 hours**



**WAKISSHA JOINT MOCK EXAMINATIONS**

**Uganda Certificate of Education**

**HISTORY OF SOUTH AFRICA**

**(c.1000 to independence)**

**Paper 4**

**2 hours**

**INSTRUCTIONS TO CANDIDATES:**

- *Answer four questions only.*
- *Any additional question(s) answered will not be marked.*
- *All questions carry equal marks.*

1. (a) Describe the migration and settlement of the Hottentots in South Africa before 1800. (12 marks)
- (b) How were they organized before the coming of the Bantu? (13 marks)
2. (a) How did the Dutch establish their Colony at the Cape? (12 marks)
- (b) What challenges did the Early Dutch settlers face at cape between 1652 and 1795. (13 marks)
3. (a) Explain the origins of the Basuto state. (12 marks)
- (b) Describe the importance of King Mosheshe in the history of Basuto land between 1820-1870 (13 marks)
4. (a) Why did the missionaries come to South Africa? (13 marks)
- (b) How did the Dutch reformed church promote Apartheid? (12 marks)
5. (a) Explain the causes of the war between the Zulu and the British in 1879. (13 marks)
- (b) How did this war affect the people of South Africa? (12 marks)
6. Describe the roles of the following in the history of South Africa.
- (a) Cecil Rhodes. (12 marks)
- (b) Paul Kruger. (13 marks)
7. (a) Why was the policy of Separate development introduced to South Africa? (13 marks)
- (b) How did this policy affect the people of South Africa? (12 marks)
8. (a) What were the causes of the Soweto uprising of 1976? (12 marks)
- (b) How did the upraising affect the people of South Africa? (13 marks)

**END**

**456/2**  
**MATHEMATICS**  
**PAPER 2**  
**July/August**  
**2½ hours**



**WAKISSHA JOINT MOCK EXAMINATIONS**

**Uganda Certificate of Education**

**MATHEMATICS**

**Paper 2**

**2hours 30 minutes**

**INSTRUCTIONS TO CANDIDATES:**

- *Answer all questions in section A and any five questions from section B.*
- *Any additional question(s) answered will not be marked.*
- *All necessary calculations must be done in the same answer booklet/sheets provided with the rest of the answers. Therefore no paper should be given for rough work.*
- *Graph paper is provided.*
- *Silent non-programmable scientific calculators and mathematical tables with a list of formulae may be used.*

## SECTION A (40 marks)

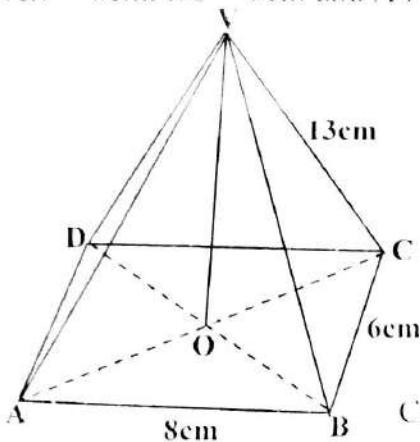
*Answer all questions in this section*

1. Without using tables or calculator evaluate:  $(25)^{\frac{1}{6}} \cdot (200)^{\frac{1}{5}}$ . (04 marks)
2. In a class of 30 students, 6 like neither mathematics (M) nor physics (P). 9 like P but not M and 7 like M but not P. How many students: (02 marks)
  - like physics or mathematics? (02 marks)
  - dislike mathematics?
3. Given that,  $g(x) = \frac{x}{y} + 5$ , find the value of y for which  $g^{-1}(8) = 6$ . (04 marks)
4. A straight line with a gradient  $\frac{1}{2}$  passes through the points (6, k) and (k, -4), find the: (04marks)
  - value of k.
  - equation of the line.
5. Given that vectors  $\vec{PQ} = \begin{pmatrix} 6 \\ -1 \end{pmatrix}$ ,  $\vec{OQ} = \begin{pmatrix} 2 \\ 3 \end{pmatrix}$  and  $\vec{OR} = \begin{pmatrix} 1 \\ 7 \end{pmatrix}$ , find the: (02marks)
  - vector  $\vec{PR}$ .
  - length of  $\vec{PR}$  to 3sf.
6. In the diagram below, the lines  $y = 2x$  and  $x + y = 9$  intersect at point Q. (04marks)
 

Determine the coordinates of P, Q and R. (04marks)
7. A customer deposited a certain amount of money in a bank that pays simple interest of r %. After 3 years the total amount of money on his account was Ugx. 358,400. If the interest earned each year was Ugx. 12,800. Calculate the; (04marks)
  - amount deposited.
  - annual interest, r %.
8. Okello travelled a journey of 132km partly by bus and partly by motorcycle. After travelling 105km at an average speed of 42km/hr by bus, he jumped on a boda motorcycle that travelled at 54km/hr for the remaining journey. What was Okello's average speed for the whole journey? (04marks)
9. Find the lowest common multiple (LCM) of the set of numbers; 10, 12 and 15. (04marks)
 

(04marks)

10. The figure below is a right pyramid ABCDV with a rectangular base ABCD with  $AB = 8\text{cm}$ ,  $BC = 6\text{cm}$  and  $AV = BV = CV = DV = 13\text{cm}$ .



Calculate the perpendicular height of the pyramid. (04marks)

### SECTION B (60 marks)

Attempt any five questions from this section. All questions carry equal marks.

11. (a) A map has a scale of  $1:n$ . The area of a forest cover on the map is  $13\text{cm}^2$ . If the actual area of the forest is  $81.25\text{km}^2$  determine the value of  $n$ . (05 marks)
- (b) A quantity  $y$  is partly constant and partly varies as the square of  $x$ . When  $y = 51$ ,  $x = 3$  and when  $y = 2.25$ ,  $x = 0.5$ .
- (i) form an equation relating  $y$  and  $x$ . (04 marks)
  - (ii) find  $y$  when  $x = 2$ . Round your answer to two decimal places. (03 marks)
12. Given that the function:  $g(x) = \frac{a}{x} + b$ . If  $g(-1) = 1\frac{1}{2}$  and  $g(2) = 9$ , determine the value(s) of:
- (a) (i)  $a$  and  $b$ . (06 marks)
  - (ii)  $x$  for which  $g(x) = 0$ . (02 marks)
  - (b) Evaluate  $g^{-1}(6)$ . (04 marks)

13. In an organization, the following allowances are not taxed; medical Ugx 720,000 per annum, Electricity Ugx 40,000 per month. Transport Ugx 2,500 per day and housing 90% of the monthly medical allowance. The tax structure below applies to all employees on their taxable income.

| Taxable income (Ugx) | Rate (%) |
|----------------------|----------|
| 00,000 - 80,000      | 2.0      |
| 80,001 - 190,000     | 5.0      |
| 190,001 - 280,000    | 7.5      |
| 280,001 - 380,000    | 12.0     |
| 380,001 - 490,000    | 15.0     |
| Above 490,000        | 20.0     |

If an employee paid a monthly income tax of Ugx 125,350 in the month of June 2018, calculate his/her:

- (a) taxable income. (08 marks)
  - (b) monthly gross income. (02 marks)
  - (c) net monthly income. (02 marks)
14. From a certain school a random sample of 50 students was selected. It was found out that in this sample, 38 students like Fanta (F), 32 students like Mirinda (M) and 24 students like

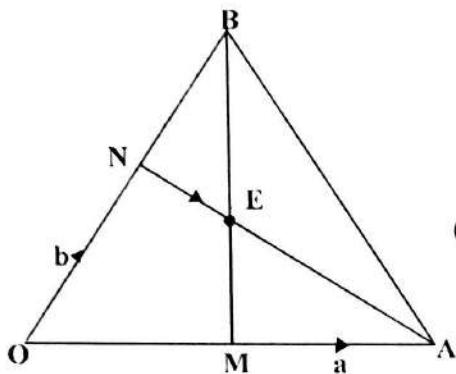
Pepsi cola (P). Eight students like neither of the drinks. All those students who like Pepsi cola also like Mirinda and 21 students like all the three drinks.

(a) Represent the above information on a neat venn diagram. (04 marks)

(b) How many students like: (i) Fanta and Mirinda? (ii) One type of drink only? (06 marks)

(c) Find the probability that a student chosen at random from the group likes at most one of the drinks. (02 marks)

15. In the diagram below,  $\overrightarrow{OA} = \mathbf{a}$ ,  $\overrightarrow{OB} = \mathbf{b}$ . M is the mid-point of  $\overrightarrow{OA}$ . Point N is on  $\overrightarrow{OB}$  such that  $3\overrightarrow{ON} = 2\overrightarrow{NB}$ . MB and NA meet at E such that  $\overrightarrow{ME} = h\overrightarrow{MB}$  and  $\overrightarrow{NE} = k\overrightarrow{NA}$ .



(a) Express in terms of  $\mathbf{a}$  and  $\mathbf{b}$  the vectors:

(i)  $\overrightarrow{AN}$

(ii)  $\overrightarrow{BM}$

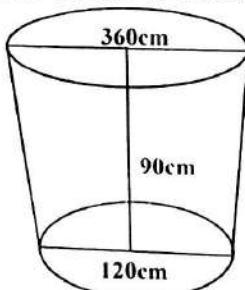
(04 marks)

- (b) Express the vector  $\overrightarrow{ME}$  in terms of; (i)  $\mathbf{a}$ ,  $\mathbf{b}$  and  $h$ .  
(ii)  $\mathbf{a}$ ,  $\mathbf{b}$  and  $k$ .

Hence find the values of the scalars  $h$  and  $k$ . (08 marks)

16. (a) The volumes of two similar cylinders are  $4752\text{cm}^3$  and  $1408\text{cm}^3$ . If the area of the curved surface of the smaller cylinder is  $352\text{cm}^2$ , calculate the area of the curved surface of the larger cylinder. (05 marks)

- (b) The figure below shows a bucket filled with water to the brim which was cut from a cone. The height of the bucket is 90cm, its base diameter is 120cm and its top diameter is 360cm.



Using  $\pi = 3.14$ , Find the capacity of the bucket in litres. (07 marks)

17. Towns P and Q are 160kms apart. A lorry left town P at 6:15am and travelled towards town Q at a steady speed of 20km/hr. A bus left town Q at 6:45am and travelled towards town P at a steady speed of 40km/hr. Using a scale of 2cm: 20kms and 2cm : 1 hour,

(a) Draw distance time graphs showing journeys of the two vehicles. (06 marks)

(b) Using your graphs estimate the;

- (i) distance from town Q where the lorry by passes the bus.  
(ii) time at which the two vehicles bypass one another.

(c) Calculate the difference in their time of arrival to respective destinations. (03 marks)

(03 marks)

**END**

**456/1**  
**MATHEMATICS**  
**PAPER 1**  
**July/August**  
**2½ hours**



**WAKISSHA JOINT MOCK EXAMINATIONS**

**Uganda Certificate of Education**

**MATHEMATICS**

**Paper 1**

**2 hours 30 minutes**

**INSTRUCTIONS TO CANDIDATES:**

- Answer **all** questions in section **A** and any **five** questions from section **B**.
- Any additional question(s) answered will not be marked.
- All necessary calculations **must** be done in the same answer booklet/sheets provided, with the rest of the answers. Therefore no paper should be given for rough work.
- Graph paper is provided.
- Silent non-programmable scientific calculators and mathematical tables with a list of formulae may be used.

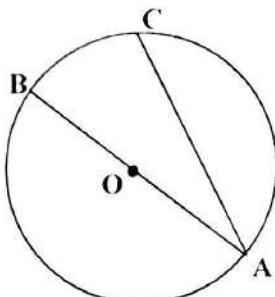
## SECTION A (40 marks)

*Answer all questions in this section*

$$1. \text{ Determine the value of } X \text{ in the equation } (250 \times 0.1)^{3x} - 5^{(2x+1)} = 0 \quad (4 \text{ marks})$$

2. Given that  $\tan \theta = 4\frac{4}{9}$ . Find without using mathematical table or calculations the value of  $\sin \theta$ . (4 marks)
3. From the same shop, Kato spent Shs. 3,500 to buy 2 books and 3 pens. Waswa spent Shs. 5,500 to buy 4 books and 3 pens. Determine the price of each book and each pen. (4 marks)

4.



The figure shows a circle of radius 10cm with centre at O.  $\overline{BC} = 12\text{cm}$ .

Find: (i)  $\overline{AC}$  (2 marks)  
(ii)  $\angle ABC$  (2 marks)

5. The mean of; k, 3, 4, 4k, 9, 5k is 6.  
Determine:- (a) Value of k. (2 marks)  
(b) The median. (2 marks)

6. Solve the equation;  $x^2 = 15 - 2x$ . (4 marks)

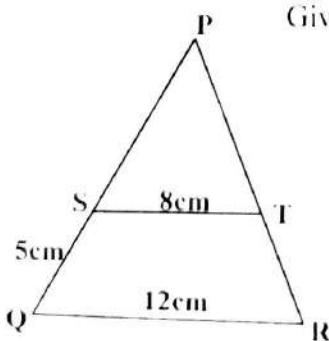
7. The points A (2,0) and B (0, 2) are rotated through  $-90^\circ$  to form A' and B'.  
Determine the coordinates of A' and B'. (4 marks)

8. Using matrix method, solve the equations:  

$$\begin{aligned} 2x - y &= 5 \\ 3x + 2y &= 4 \end{aligned}$$
 (4 marks)

9. In the figure below,  $\overline{ST} = 8\text{cm}$ ,  $QR = 12\text{cm}$  and  $QS = 5\text{cm}$ .

Given that QR is parallel to ST. Find the length  $\overline{PS}$ . (4 marks)



10. Without using tables or calculators, evaluate 
$$\frac{75.63^2 - 24.37^2}{512.6}$$
 (4 marks)

## SECTION B (60 marks)

*Attempt any five questions from this section. All questions carry equal marks.*

11. The table below shows marks obtained in a Geography test by 50 students of a school in Wakiso District.

|    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|
| 33 | 45 | 69 | 52 | 72 | 40 | 32 | 35 | 56 | 30 |
| 41 | 20 | 31 | 66 | 29 | 49 | 34 | 50 | 39 | 47 |
| 52 | 43 | 50 | 61 | 59 | 53 | 44 | 58 | 85 | 57 |
| 68 | 55 | 62 | 75 | 37 | 63 | 52 | 64 | 46 | 65 |
| 54 | 48 | 38 | 42 | 51 | 67 | 77 | 88 | 55 | 78 |

- (a) Construct a frequency table for the data above starting with 20 – 29. (7 marks)  
 (b) Using a working mean of 44.5. Calculate the mean. (2 marks)  
 (c) Draw a histogram and use it to estimate the modal mark. (3 marks)

12. The seats in a stadium are graded as first, second and third classes. The categories of people who go to watch the matches are children and adults.

One day, the stadium seats were filled as below:-

First class seats were occupied by 1,500 children and 2,000 adults, second class seats were occupied by 3,000 children and 2,500 adults, while third class seats were filled by 500 children and 1,800 adults.

First class children and adults are charged Shs.2,000 and 2,500 respectively, second class children and adults are charged Shs.1,000 and Shs.1,500 respectively, while third class children and adults are charged Shs.500 and Shs.1,000 respectively.

- (a) Form a  $1 \times 3$  matrix showing how the three classes of seats were filled by;  
 (i) Children. (1 mark)  
 (ii) Adults. (1 mark)  
 (b) Use matrix multiplication to obtain the collections by the stadium managers from:  
 (i) Children only. (4 marks)  
 (ii) Adults only. (4 marks)  
 (c) Hence obtain the total collections by the stadium managers from the match that day. (2 marks)

13. A business man wants to stock two types of vehicles P and Q in his bond. The cost of type P is Ugx 20million each and that of type Q is Ugx100 million each. Vehicles P requires packing space of  $20m^3$  and Q requires packing space of  $30m^3$ . The number of vehicles of type Q should not exceed that of type P. The business man has atleast Ugx800 million to invest and available space of  $600m^2$ . If  $x$  and  $y$  represent number of vehicles of type P and Q respectively.

- (a) Write down **five** inequalities from the given information. (4 marks)  
 (b) Represent the **five** inequalities on the same axes. (6 marks)  
 (c) Find the greatest number of vehicles of both types P and Q that the investor can buy using the minimum amount of money. (2 marks)

14. (a) Copy and complete the table below for  $y = \sin 2\theta$ . (4 marks)

|           |   |            |            |            |            |            |             |             |             |             |             |             |             |
|-----------|---|------------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 0         | 0 | $15^\circ$ | $30^\circ$ | $45^\circ$ | $60^\circ$ | $75^\circ$ | $90^\circ$  | $105^\circ$ | $120^\circ$ | $135^\circ$ | $150^\circ$ | $165^\circ$ | $150^\circ$ |
| 20        | 0 | $30^\circ$ |            |            |            |            | $180^\circ$ |             |             |             |             | 230         |             |
| $\sin 20$ | 0 | 0.5        |            |            |            |            | 0           |             |             |             |             | -0.77       |             |

- (b) Use the completed table to draw the graph for;  $y = \sin 20$  for  $15^\circ \leq \theta \leq 180^\circ$ . (2 marks)  
 (c) Use your graph to solve the equation:  
 (i)  $\sin 20 = 0.5$   
 (ii)  $\sin 20 = 1$

(6 marks)

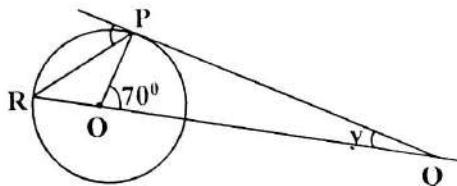
**Turn Over**

15. Two dice are tossed and the product of the numbers that appear upper most is recorded as in the table below:-

|       |   | Die 1 |    |    |   |    |    |
|-------|---|-------|----|----|---|----|----|
|       |   | 1     | 2  | 3  | 4 | 5  | 6  |
| Die 2 | 1 | 1     |    |    |   |    |    |
|       | 2 |       |    |    |   |    | 12 |
|       | 3 |       |    |    |   |    |    |
|       | 4 |       |    |    |   | 20 |    |
|       | 5 |       | 10 |    |   |    |    |
|       | 6 |       |    | 18 |   | 30 |    |

- (a) Copy and complete the table. (4 marks)  
 (b) Find the probability that the product is a multiple of 5. (4 marks)  
 (c) Find the probability that the product is a triangular number. (4 marks)

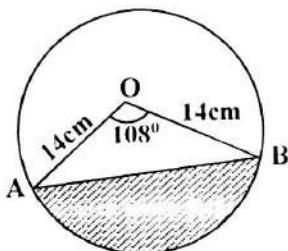
16. (a)



In the diagram above, PQ is a tangent to the circle with centre O and angle  $\angle POQ = 30^\circ$ . Find the size of angle x and y.

(6 marks)

- (b)



The diagram shows a circle with an arc which subtends an angle of  $108^\circ$  at the centre of the circle of radius 14cm.

Find the areas of:-

- (i) triangle OAB.  
 (ii) minor sector OAB.  
 (iii) hence the area of the shaded segment.

(6 months)

17. A triangle with coordinates P(-5, 2), Q(-1, 2) and R(-2, 6) is rotated through  $90^\circ$  about the origin to form  $P^I Q^I R^I$ .  $P^I Q^I R^I$  is then reflected along the line  $x + y = 0$  to form  $P^{II} Q^{II} R^{II}$ .

- (a) State the matrix for: (i) rotation.  
 (ii) Reflection.

(2 marks)

- (b) Use your matrices above to determine the coordinates of :  
 (i)  $P^I Q^I R^I$ .  
 (ii)  $P^{II} Q^{II} R^{II}$ .

(6 marks)

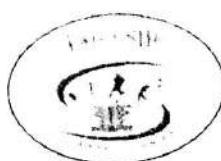
- (c) Find the matrix which maps PQR on to  $P^{II} Q^{II} R^{II}$ .  
 Hence describe the transformation.

(4 marks)

**END**

**241/1**  
**HISTORY OF**  
**EAST AFRICA**

**Paper 1**  
**July/August**  
**2 hours**



**WAKISSHA JOINT MOCK EXAMINATIONS**

**Uganda Certificate of Education**

**History of East Africa**

**(c. 1000 to independence)**

**Paper 1**

**2 hours**

**INSTRUCTIONS TO CANDIDATES:**

- *Answer four questions only.*
- *Any additional question(s) answered will not be marked.*
- *All questions carry equal marks.*
- *Use relevant examples, illustrations and maps where applicable.*

1. a) Describe the migration and settlement of the Western Bantu people into East Africa between 1000 and 1500. (13 marks)  
b) What were the effects of their settlement in East Africa? (12 marks)
2. a) What were the origins of Buganda kingdom? (12 marks)  
b) Explain the factors that led to the expansion of Buganda by the 19<sup>th</sup> century. (13 marks)
3. a) Describe the Portuguese conquest of the East Africa coast up to 1510. (13 marks)  
b) Why were the coastal people easily conquered by the Portuguese? (12 marks)
4. a) What were the reasons for the development of long distance trade in East Africa? (13 marks)  
b) How did this trade affects the people of East Africa? (12 marks)
5. a) Explain the role of Christian missionaries in the colonization of East Africa? (12 marks)  
b) What challenges were faced by missionaries in East Africa? (13 marks)
6. a) Why were European interested in colonizing East Africa during the 19<sup>th</sup> century? (12 marks)  
b) How did the colonization process affect the people of East Africa? (13 marks)
7. a) Why was the 1900 Buganda Agreement signed? (12 marks)  
b) How did the terms of the Agreement affect the people of Uganda up to independence? (13 marks)
8. a) Why did the British adopt the system of indirect rule in Uganda? (12 marks)  
b) Describe how the system worked in Uganda. (13 marks)
9. a) What led to the signing of the Devonshire white paper of 1923 in Kenya? (15marks)  
b) Explain the terms of the Devonshire white paper. (10 marks)
10. a) What led to the outbreak of the MAUMAU rebellion? (13 marks)  
b) In what ways did this rebellion affect the history of Kenya? (12 marks)

**END**

273/1  
**GEOGRAPHY**  
**Paper 1**  
**July /August**  
**2 $\frac{1}{2}$  hours**



**WAKISSHA JOINT MOCK EXAMINATIONS**

**Uganda Certificate of Education**

**GEOGRAPHY**

**Paper 1**

**2 hours 30 minutes**

**INSTRUCTIONS TO CANDIDATES:**

- *This paper consists of parts I and II.*
- *Part I and Section A of Part II are Compulsory.*
- *Answer only one question from Section B of Part II*
- *Any additional question(s) answered will not be marked*

*Answers to all questions must be written in the answer booklet/sheets provided.*

## PART I

### OBJECTIVE - TYPE QUESTIONS (30 MARKS)

*There are 30 compulsory questions. Each question carries one mark.  
Answers to this part must be written in the answer booklet sheet provided.*

1. Under estimated census figures are likely to affect:
  - A. national expenditure.
  - B. national income.
  - C. national planning.
  - D. national peace
2. Intensive heat and pressure metamorphises granite to:
  - A. slates
  - B. gneiss
  - C. quartzite
  - D. graphite.
3. Secondary fracturing within the rift valley floor of East Africa formed:
  - A. fault scarps.
  - B. tilt blocks.
  - C. grabens
  - D. block mountains.
4. Which of the following is the most serious problem facing the people of Manjiya.
  - A. Soil exhaustion
  - B. Land fragmentation.
  - C. Landslides.
  - D. Soil erosion.
5. Deforestation of Bugala Island is as a result of
  - A. industrialisation.
  - B. lumbering.
  - C. cultivation.
  - D. charcoal burning.
6. Which one of the following uplands in East Africa was formed due to accumulation of lava?
  - A. Rwenzori.
  - B. Usambara.
  - C. Elgon.
  - D. Uluguru.
7. The major threat to Lukaya wetlands is
  - A. rice growing.
  - B. settlement.
  - C. sand extraction.
  - D. road construction.
8. Sahel conditions in East Africa can best be controlled by.
  - A. green revolution.
  - B. mass sensitization.
  - C. environmental conservation.
  - D. pastoral transformation.

9. Exploitation of limestone in Usukuru hills of Tororo has declined due to:  
A. mineral exhaustion.  
B. high cost of processing.  
C. infrastructure breakdown.  
D. limited market.
10. Which of the following riverine features is associated with vertical erosion?  
A. Rapids.  
B. Gorges.  
C. Interlocking spurs.  
D. Bluffs.
11. The major problem facing large scale industrialization in East Africa is  
A. inadequate skilled labour.  
B. limited domestic market.  
C. inadequate capital.  
D. raw material shortage.
12. Presence of an Inland delta on river Nzoia is attributed to alluvial:  
A. deposition on river banks.  
B. erosion on river banks.  
C. erosion on river mouths.  
D. deposition on river mouths
13. Which one of the following areas receive the least mean annual rainfall in East Africa?  
A. Malindi.  
B. Lodwar.  
C. Dodoma.  
D. Mwanza.
14. The development of small hydro- electric power stations in Kenya is mainly intended to  
A. promote rural electrification.  
B. generate power for export.  
C. reduce power importation.  
D. promote small scale industries.
15. Atolls are examples of ..... Rocks.  
A. igneous.  
B. sedimentary.  
C. metamorphic.  
D. extrusive volcanic.
16. Which one of the following is a frontier town?  
A. Arua.  
B. Nairobi.  
C. Mombasa.  
D. Malaba.
17. Marine fishing at the coast of East Africa is mainly hindered by:  
A. mangrove vegetation.  
B. coral reefs.  
C. water pollution.  
D. strong winds.

**Turn Over**

18. Which one of the following hydro-power stations in East Africa is operated by an aqueduct?
- Isimba.
  - Bujagali.
  - Seven forks.
  - Mobuku.
19. The fertility of soil mainly depends on:
- relief.
  - vegetation cover.
  - parent rock.
  - biotic factor.
20. Gabions are control measures for:
- road accidents.
  - water accidents.
  - mass wasting.
  - soil exhaustion.
21. Horticulture has developed in East Africa mainly due to:
- high beef price.
  - urbanisation.
  - agricultural modernisation.
  - improved transport.
22. Which one of the following features are common in Karst areas of Nyakasura.
- Dykes.
  - Escarpments.
  - Plunge pool.
  - Stalagmites.
23. Permeability of a rock refers to the ability of a rock to:
- dissolve water.
  - retain water.
  - allow water through.
  - react with water.
24. Weather conditions caused by local winds in low lands in East Africa is;
- hailstorm.
  - thunder storm.
  - temperature inversion.
  - heavy rainfall.
25. The type of climate condition experienced in Ankole – Masaka corridor is
- equatorial.
  - montane.
  - semi-arid.
  - tropical.
26. Seasonal variation of lake Victoria is likely to affect
- water transport.
  - fishing.
  - tourism.
  - power production.

27. Break down of the railway transport to Kasese is as a result of:
- political instability.
  - heavy floods.
  - ore exhaustion.
  - vandalisation of wagons.
28. Arusha airport has developed mainly due to:
- tourism.
  - mining.
  - trade.
  - agriculture.
29. Virunga ranges are mainly important for;
- mining.
  - settlement.
  - tourism.
  - cultivation.
30. The construction of the Standard Gauge Railway (SGR) line is aimed at promoting
- political stability.
  - easing transportation.
  - widening markets.
  - industrial growth.

## PART II

### MAPWORK, PHOTOGRAPH INTERPRETATION, FIELD WORK AND EAST AFRICA.

Answer **four** questions from part **II**, including question **1, 2 and 3** which are compulsory.

#### SECTION A

##### **1. Compulsory Question : MAPWORK (20 Marks)**

Answer all parts of this question.

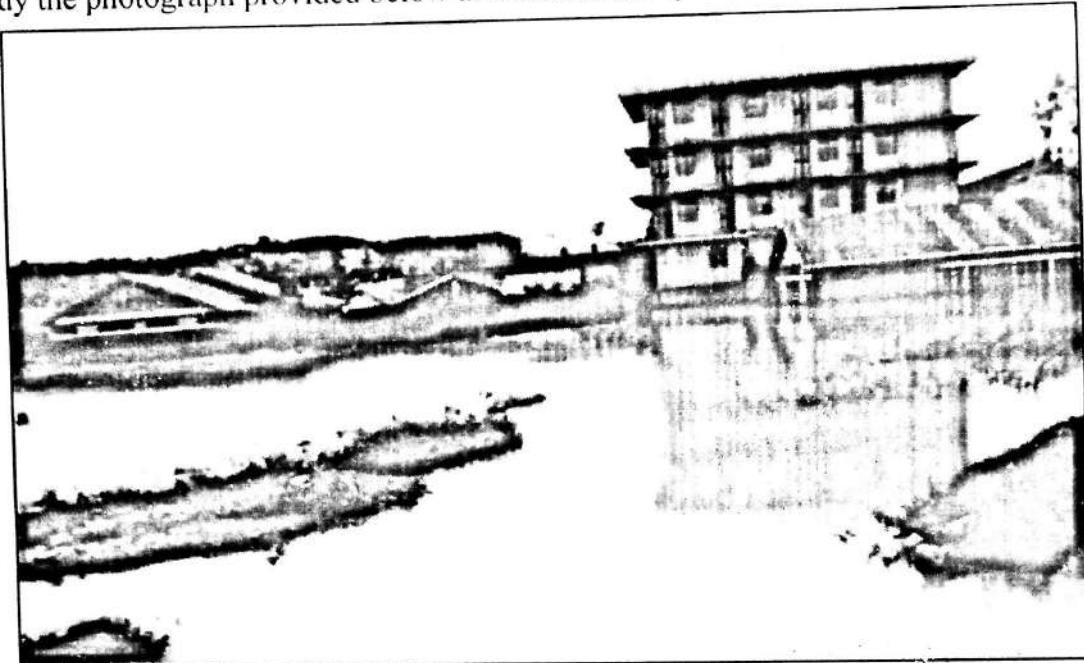
Study the EAST AFRICA 1:50,000 UGANDA: PAKWACH map extract part of sheet 29/2 series Y732 Edition 2-U.S.D and answer the questions that follow.

- |         |  |            |
|---------|--|------------|
| (a) (i) | Name the man-made features at grid reference 321726.   | (01 mark)  |
| (ii)    | State the grid reference of Angala river confluence.   | (01 mark)  |
| (b) (i) | Calculate the average height of Pakwach map extract.   | (02 marks) |
| (ii)    | State the global location of Pakwach map extract.  | (02 marks) |
| (c)     | Draw a relief section of the area between Easting 22 and 30 along Northing 69 and on it mark and name: |            |
| (i)     | Communication routes.  |            |
| (ii)    | Drainage features.   |            |
| (iii)   | Settlements.   |            |
| (iv)    | Vegetation types.  | (10 marks) |
| (d) (i) | Name any two social services in the map extract.   | (02 marks) |
| (ii)    | Describe the relationship between settlement and provision of social services.                         | (02 marks) |

**Turn Over**

**2. PHOTOGRAPH INTERPRETATION (Compulsory) (15 marks)**

Study the photograph provided below and answer the questions that follow:



- a) Identify the;
- (i) Land use type in the background. (1 mark)
  - (ii) Environmental calamity in the photograph. (1 mark)
- b) Describe the factors which have led to the environmental calamity in a) ii) above (4 marks)
- c) Explain the;
- (i) Problems resulting from the above calamity to the people living in the area. (4 marks)
  - (ii) Steps taken to solve the effects suggested in c) i) above. (3 marks)
- d) Giving reasons for your answer, suggest an area in East Africa where the photograph could have been taken. (2 marks)

**3. FIELD WORK (Compulsory) (15 marks)**

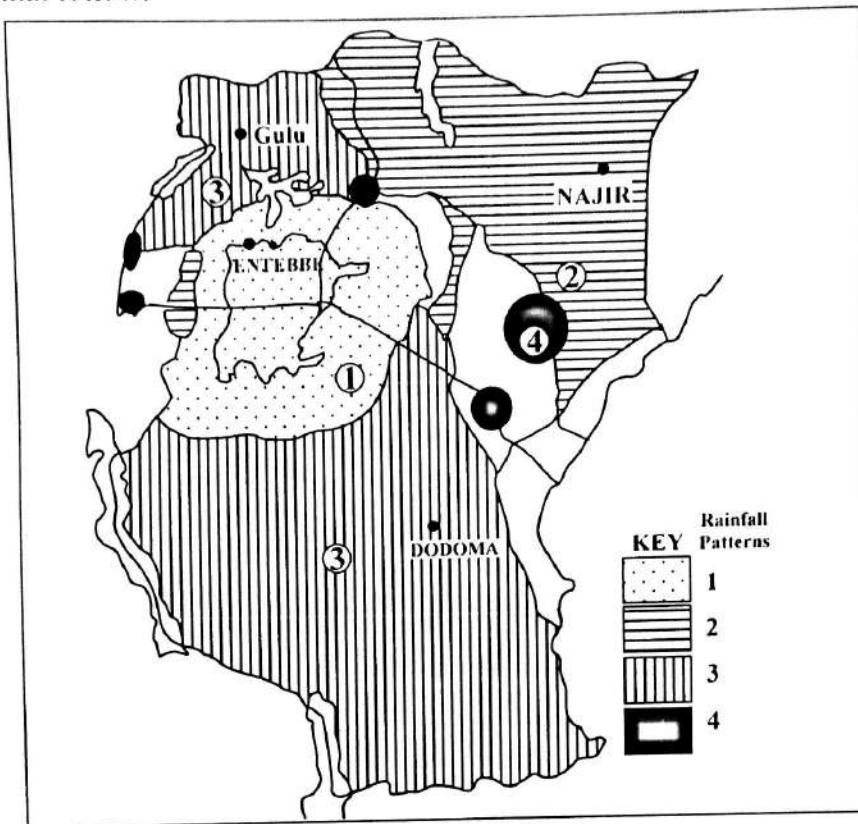
For any one field work study you have conducted either as an individual or a group;

- (a) State the;
- (i) topic. (02 marks)
  - (ii) objectives, of the study. (02 marks)
- (b) Describe any two ways you used to collect information from the field during the study. (04 marks)
- (c) Draw a line transect of the area of study and on it mark and name.
- (i) two physical features. (05 marks)
  - (ii) two land use patterns. (05 marks)
- (d) Outline any two practical skills you acquired during the study. (02 marks)

## SECTION B: EAST AFRICA

Answer only **one** question from this section.

4. Study the sketch map of East Africa showing selected rainfall patterns and answer the questions that follow.



- (a) Name the climatic regions in the rainfall patterns marked.
- (i) 1
  - (ii) 2
  - (iii) 3
  - (iv) 4
- (04 marks)
- (b) Explain the factors responsible for the rainfall pattern in;
- (i) 1
  - (ii) 2
- (08 marks)
- (c) Outline the effects of the rainfall pattern in b(ii) on the people living in the area.
- (04 marks)
- (d) Suggest measures that can be taken by the East Africa countries to reduce the effects stated in (c) above.
- (04 marks)
5. (a) Draw a sketch map of East Africa and on it mark and name;
- (i) Mining centers: Bamburi, Tororo and Mwadui.
  - (ii) Airports: Arusha and Entebbe.
  - (i) Inland ports: Kisumu and Port bell
  - (ii) The Uganda railways.
- (09 marks)

**Turn Over**

- (b) (i) Identify **one** mineral exploited in each of the mining centers stated in a (i) above. (03 marks)
- (ii) Describe the physical factors which have favoured the exploitation of the mineral identified in b(i) above. (04 marks)
- (c) Outline the effects of mining on the environment in East Africa. (04 marks)
- 6.** (a) Draw a sketch map of East Africa and on it mark and name:
- (i) Miombo wood lands.
  - (ii) two montane forests.
  - (iii) Mangrove forests.
  - (iv) Namanve and Webuye planted forests. (06 marks)
- (b) Describe the characteristics of:
- (i) Miombo woodlands.
  - (ii) Mangrove forests.
  - (iii) Planted forests. (06 marks)
- (c) Explain the problems limiting effective utilization of forests in East Africa. (06 marks)
- (d) Outline the negative effects of forest utilization on the environment. (02 marks)
- 7.** Study the table below showing industrial output in 2015 and answer the questions that follow.

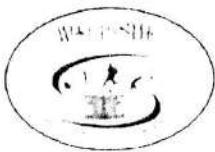
| Product      | Percentage quantity of output |                 |                 |
|--------------|-------------------------------|-----------------|-----------------|
|              | Uganda                        | Kenya           | Tanzania        |
| Textile      | -                             | 18.3            | 21.2            |
| Beverage     | 9.3                           | 11.4            | 10.3            |
| Cement       | 23.1                          | -               | 24.5            |
| Diary        | 14.8                          | 18.5            | 15.6            |
| Agro-produce | 38.3                          | 25.5            | 28.4            |
| Total        | 1,339,200 tones               | 4,533,000 tones | 3,755,600 tones |

*Adopted from 2018 African development indicator, The world bank pp. 73-97*

- (a) (i) Calculate the relative importance of :
- Textile output in Uganda.
  - Cement output in Kenya. (02marks)
- (ii) Calculate the output value of Agro-produce in:
- Uganda.
  - Tanzania. (02marks)
- (b) Draw a pie chart to show relative importance of Kenya's production in 2015. (08 marks)
- (c) Explain the conditions favouring industrial production in Kenya. (06 marks)
- (d) Outline the environmental effects of the industrial growth in East Africa. (02 marks)

**END**

**456/1**  
**MATHEMATICS**  
**PAPER 1**  
**July/August**  
**2½ hours**



**WAKISSHA JOINT MOCK EXAMINATIONS**  
**Uganda Certificate of Education**  
**MATHEMATICS**  
**Paper 1**

**2 hours 30 minutes**

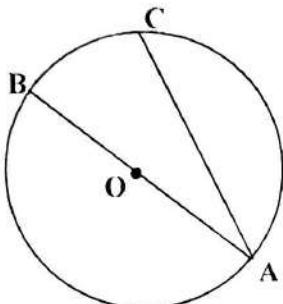
**INSTRUCTIONS TO CANDIDATES:**

- Answer *all* questions in section A and any five questions from section B.
- Any additional question(s) answered will not be marked.
- All necessary calculations **must** be done in the same answer booklet sheets provided, with the rest of the answers. Therefore no paper should be given for rough work.
- Graph paper is provided.
- Silent non-programmable scientific calculators and mathematical tables with a list of formulae may be used.

## SECTION A (40 marks)

*Answer all questions in this section*

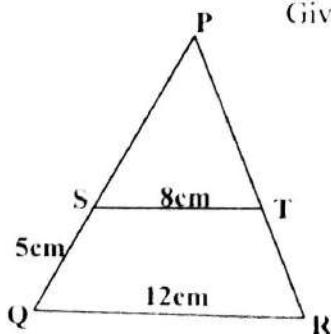
1. Determine the value of  $X$  in the equation  $(250 \times 0.1)^{3x} - 5^{(2x+1)} = 0$  (4 marks)
2. Given that  $\tan \theta = \frac{4}{9}$ . Find without using mathematical table or calculations the value of  $\sin \theta$ . (4 marks)
3. From the same shop, Kato spent Shs. 3,500 to buy 2 books and 3 pens. Waswa spent Shs. 5,500 to buy 4 books and 3 pens. Determine the price of each book and each pen. (4 marks)
- 4.



The figure shows a circle of radius 10cm with centre at O.  $\overline{BC} = 12\text{cm}$ .

- Find:
- (i)  $\overline{AC}$  (2 marks)
  - (ii)  $\angle ABC$  (2 marks)
5. The mean of:  $k, 3, 4, 4k, 9, 5k$  is 6.  
Determine:-  
    - (a) Value of  $k$ . (2 marks)
    - (b) The median. (2 marks)
  6. Solve the equation;  $x^2 = 15 - 2x$ . (4 marks)
  7. The points A (2,0) and B (0, 2) are rotated through  $-90^\circ$  to form A' and B'.  
Determine the coordinates of A' and B'. (4 marks)
  8. Using matrix method, solve the equations:  

$$\begin{aligned} 2x - y &= 5 \\ 3x + 2y &= 4 \end{aligned}$$
 (4 marks)
  9. In the figure below,  $\overline{ST} = 8\text{cm}$ ,  $QR = 12\text{cm}$  and  $QS = 5\text{cm}$ .  
Given that QR is parallel to ST. Find the length  $\overline{PS}$ . (4 marks)



10. Without using tables or calculators, evaluate  $\frac{75.63^2 - 24.37^2}{512.6}$  (4 marks)

## SECTION B (60 marks)

*Attempt any five questions from this section. All questions carry equal marks.*

11. The table below shows marks obtained in a Geography test by 50 students of a school in Wakiso District.

|    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|
| 33 | 45 | 69 | 52 | 72 | 40 | 32 | 35 | 56 | 30 |
| 41 | 20 | 31 | 66 | 29 | 49 | 34 | 50 | 39 | 47 |
| 52 | 43 | 50 | 61 | 59 | 53 | 44 | 58 | 85 | 57 |
| 68 | 55 | 62 | 75 | 37 | 63 | 52 | 64 | 46 | 65 |
| 54 | 48 | 38 | 42 | 51 | 67 | 77 | 88 | 55 | 78 |

- (a) Construct a frequency table for the data above starting with 20 – 29. (7 marks)  
 (b) Using a working mean of 44.5. Calculate the mean. (2 marks)  
 (c) Draw a histogram and use it to estimate the modal mark. (3 marks)

12. The seats in a stadium are graded as first, second and third classes. The categories of people who go to watch the matches are children and adults.

One day, the stadium seats were filled as below:-

First class seats were occupied by 1,500 children and 2,000 adults, second class seats were occupied by 3,000 children and 2,500 adults, while third class seats were filled by 500 children and 1,800 adults.

First class children and adults are charged Shs.2,000 and 2,500 respectively, second class children and adults are charged Shs.1,000 and Shs.1,500 respectively, while third class children and adults are charged Shs.500 and Shs.1,000 respectively.

- (a) Form a  $1 \times 3$  matrix showing how the three classes of seats were filled by:  
 (i) Children. (1 mark)  
 (ii) Adults. (1 mark)
- (b) Use matrix multiplication to obtain the collections by the stadium managers from:  
 (i) Children only. (4 marks)  
 (ii) Adults only. (4 marks)
- (c) Hence obtain the total collections by the stadium managers from the match that day. (2 marks)

13. A business man wants to stock two types of vehicles P and Q in his bond. The cost of type P is Ugx 20million each and that of type Q is Ugx100 million each. Vehicles P requires packing space of  $20m^3$  and Q requires packing space of  $30m^3$ . The number of vehicles of type Q should not exceed that of type P. The business man has atleast Ugx800 million to invest and available space of  $600m^3$ . If  $x$  and  $y$  represent number of vehicles of type P and Q respectively.

- (a) Write down **five** inequalities from the given information. (4 marks)  
 (b) Represent the **five** inequalities on the same axes. (6 marks)  
 (c) Find the greatest number of vehicles of both types P and Q that the investor can buy using the minimum amount of money. (2 marks)

14. (a) Copy and complete the table below for  $y = \sin 2\theta$ . (4 marks)

|    | 0 | $15^\circ$ | $30^\circ$ | $45^\circ$ | $60^\circ$ | $75^\circ$ | $90^\circ$  | $105^\circ$ | $120^\circ$ | $135^\circ$ | $150^\circ$ | $165^\circ$ | $150^\circ$ |
|----|---|------------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 0  | 0 | $30^\circ$ |            |            |            |            | $180^\circ$ |             |             |             |             | 230         |             |
| 20 | 0 |            |            |            |            |            | 0           |             |             |             |             | 0.77        |             |

- (b) Use the completed table to draw the graph for;  $y = \sin 2\theta$  for  $15^\circ \leq \theta \leq 180^\circ$ . (2 marks)

- (c) Use your graph to solve the equation:  
 (i)  $\sin 2\theta = 0.5$   
 (ii)  $\sin 2\theta = 1$

(6 marks)

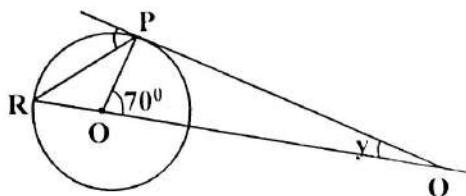
**Turn Over**

15. Two dice are tossed and the product of the numbers that appear upper most is recorded as in the table below:-

|       |  | Die 1 |   |    |    |    |    |
|-------|--|-------|---|----|----|----|----|
|       |  | 1     | 2 | 3  | 4  | 5  | 6  |
| Die 2 |  | 1     | 1 |    |    |    |    |
|       |  | 2     |   |    |    |    | 12 |
|       |  | 3     |   |    |    |    |    |
|       |  | 4     |   |    |    | 20 |    |
|       |  | 5     |   | 10 |    |    |    |
|       |  | 6     |   |    | 18 |    | 30 |

- (a) Copy and complete the table. (4 marks)  
 (b) Find the probability that the product is a multiple of 5. (4 marks)  
 (c) Find the probability that the product is a triangular number. (4 marks)

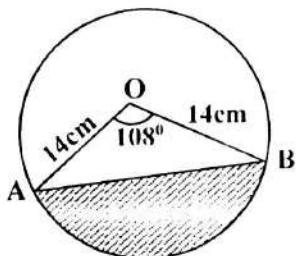
16. (a)



In the diagram above, PQ is a tangent to the circle with centre O and angle  $\angle POQ = 30^\circ$ . Find the size of angle x and y.

(6 marks)

(b)



The diagram shows a circle with an arc which subtends an angle of  $108^\circ$  at the centre of the circle of radius 14cm.

Find the areas of:-

- (i) triangle OAB.  
 (ii) minor sector OAB.  
 (iii) hence the area of the shaded segment.

(6 months)

17. A triangle with coordinates P(-5, 2), Q(-1, 2) and R(-2, 6) is rotated through  $90^\circ$  about the origin to form  $P'Q'R'$ .  $P'Q'R'$  is then reflected along the line  $x + y = 0$  to form  $P''Q''R''$ .

- (a) State the matrix for: (i) rotation.  
 (ii) Reflection.

(2 marks)

- (b) Use your matrices above to determine the coordinates of;  
 (i)  $P'Q'R'$ .  
 (ii)  $P''Q''R''$ .

(6 marks)

- (c) Find the matrix which maps PQR on to  $P''Q''R''$ .  
 Hence describe the transformation.

(4 marks)

**END**

**P310/2**  
**LITERATURE**  
**IN ENGLISH**  
**(Plays)**  
**PAPER 2**  
**July/August**  
**3 hours**



**WAKISSHA JOINT MOCK EXAMINATIONS**

**Uganda Advanced Certificate of Education**

**LITERATURE IN ENGLISH**

**(Plays)**

**Paper 2**

**3 hours**

**INSTRUCTIONS TO CANDIDATES:**

- *This paper consists of four sections A, B, C and D.*
- *Attempt three questions in all, one question must be chosen from section A and any two others from sections B, C, and D.*
- *Not more than one question must be chosen from any one section.*
- *Any additional question(s) answered will not be marked.*

## SECTION A

### 1. WILLIAM SHAKESPEARE: Richard III

BUCKINGHAM: Welcome, sweet prince, to London, to your chamber.  
RICHARD: Welcome, dear cousin, my thoughts' sovereign:

The weary way hath made you melancholy.

PRINCE: No, uncle; but our crosses on the way  
Have made it tedious, wearisome, and heavy:

RICHARD: I want more uncles here to welcome me.  
Sweet prince, the untainted virtue of your years  
Hath not yet dived into the world's deceit:  
Nor more can you distinguish of a man  
Than of his outward show, which, God he knows,  
Seldom or never jumpeth with the heart.  
Those uncles which you want were dangerous;  
Your grace attended to their sug'red words,  
But looked not on the poison of their hearts:  
God keep you from them, and from such false friends!  
God keep me from false friends! but they were none.

PRINCE: My lord, the Mayor of London comes to greet you.  
RICHARD: *Enter Lord Mayor, and his train*

MAYOR: God bless your grace with health and happy days!

PRINCE: I thank you, good my lord, and thank you all.

I thought my mother and my brother York..... 20  
Would long ere this have met us on the way:  
Fie, what a slug is Hastings, that he comes not  
To tell us whether they will come or no!

*Enter LORD HASTINGS*

BUCKINGHAM: And, in good time, here comes the sweating lord.

PRINCE: Welcome, my lord: what, will our mother come ?

HASTINGS: On what occasion God he knows, not I,  
The queen your mother and your brother York  
Have taken sanctuary: the tender prince  
Would fain have come with me to meet your grace,  
But by his mother was perforce withheld.

BUCKINGHAM: Fie, what an indirect and peevish course...  
Is this of hers! Lord Cardinal, will your grace  
Persuade the queen to send the Duke of York  
Unto his princely brother presently ?  
If she deny, Lord Hastings, go with him,  
And from her jealous arms pluck him perforce.

CARDINAL: My Lord of Buckingham, if my weak oratory  
Can from his mother win the Duke of York,  
Expect him here; but if she be obdurate  
To mild entreaties, God in heaven forbid..... 40  
We should infringe the holy privilege  
Of blessed sanctuary! not for all this land  
Would I be guilty of so deep a sin.

BUCKINGHAM: You are too senseless-obstinate, my lord,  
Too ceremonious and traditional:  
Weigh it but with the grossness of this age,

You break not sanctuary in seizing him.  
The benefit thereof is always granted  
To those whose dealings have deserved the place  
And those who have the wit to claim the place:  
This prince hath neither claimed it nor deserved it;  
Therefore, in mine opinion, cannot have it:  
Then, taking him from thence that is not there,  
You break no privilege nor charter there.  
Oft have I heard of sanctuary men,  
But sanctuary children ne'er till now.

CARDINAL: My lord, you shall o'er-rule my mind for once.  
Come on, Lord Hastings, will you go with me?

HASTINGS: I go, my lord.

PRINCE: Good lords, make all the speedy haste you may.

[Cardinal and Hastings depart]

Say, uncle Gloucester, if our brother come,  
Where shall we sojourn till our coronation?  
Where it seems best unto your royal self.  
If I may counsel you, some day or two  
Your highness shall repose you at the Tower:  
Then where you please, and shall be thought most fit  
For your best health and recreation.

PRINCE: I do not like the Tower, of any place.

Did Julius Caesar build that place, my lord?

BUCKINGHAM: He did, my gracious lord, begin that place;  
Which, since, succeeding ages have re-edified.

PRINCE: Is it upon record, or else reported  
Successively from age to age, he built it?

BUCKINGHAM: Upon record, my gracious lord.

PRINCE: But say, my lord, it were not regist'red,  
Methinks the truth should live from age to age,  
As 'twere retailed to all posterity,  
Even to the general all-ending day.

RICHARD: (Aside) So wise so young, they say, do ne'er live long.

#### Questions

- a) Place the extract in the context. (08 marks)
- b) Describe the characters of;
  - (i) Richard (05 marks)  
and
  - (ii) Prince as portrayed in the extract. (05 marks)
- c) Comment on the dramatic techniques used in the extract. (06 marks)
- d) What is the significance of the extract to the rest of the play? (10 marks)

#### 2. WILLIAM SHAKESPEARE: *King John*

CONSTANCE: O, lawful let it be  
That I have room with Rome to curse awhile!  
Good father cardinal, cry thou amen  
To my keen curses; for without my wrong  
There is no tongue hath power to curse him right.

Turn Over

- PANDULPH:  
CONSTANCE:  
PANDULPH:  
ELINOR:  
CONSTANCE:  
AUSTRIA:  
BASTARD:  
AUSTRIA:  
BASTARD:  
K. JOHN:  
CONSTANCE:  
LEWIS:  
BLANCH:  
CONSTANCE:  
BLANCH:  
CONSTANCE:  
K. JOHN:  
CONSTANCE:  
AUSTRIA:  
BASTARD:  
K. PHILIP:  
PANDULPH:  
K. PHILIP:
- There's law and warrant, lady, for my curse.  
And for mine too. When law can do no right,  
Let it be lawful that law bar no wrong:  
Law cannot give my child his kingdom here;  
For he that holds his kingdom holds the law:  
Therefore, since law itself is perfect wrong,  
How can the law forbid my tongue to curse?
- Philip of France, on peril of a curse,  
Let go the hand of that arch-heretic,  
And raise the power of France upon his head,  
Unless he do submit himself to Rome.  
Look'st thou pale, France? do not let go thy hand.  
Look to that, devil, lest that France repent,  
And by disjoining hands, hell lose a soul.  
King Philip, listen to the cardinal.  
And hang a calfs-skin on his recreant limbs.  
Well, ruffian, I must pocket up these wrongs.  
Because—  
Your breeches best may carry them.  
Philip, what say'st thou to the cardinal?  
What should he say, but as the cardinal?  
Bethink you, father, for the difference  
Is purchase of a heavy curse from Rome,  
Or the light loss of England for a friend:  
Forgo the easier.  
That's the curse of Rome.  
O Lewis, stand fast, the devil tempts thee here  
In likeness of a new untrimmed bride.  
The Lady Constance speaks not from her faith,  
But from her need.  
O, if thou grant my need,  
Which only lives but by the death of faith,  
That need must needs infer this principle,  
That faith would live again by death of need:  
O then, tread down my need, and faith mounts up,  
Keep my need up, and faith is trodden down.  
The king is moved, and answers not to this.  
O, be removed from him, and answer well.  
Do so, King Philip, hang no more in doubt.  
Hang nothing but a calfs-skin, most sweet lout.  
I am perplexed, and know not what to say.
- What canst thou say but will perplex thee more,  
If thou stand excommunicate and cursed?  
Good reverend father, make my person yours,  
And tell me how you would bestow yourself.  
This royal hand and mine are newly knit,  
And the conjunction of our inward souls  
Married in league, coupled and linked together  
With all religious strength of sacred vows:  
The latest breath that gave the sound of words  
Was deep-sworn faith, peace, amity, true love

Between our kingdoms and our royal selves,  
 And even before this truce, but new before,  
 No longer than we well could wash our hands  
 To clap this royal bargain up of peace,  
 Heaven knows, they were besmeared and over stained  
 With slaughter's pencil, where revenge did paint  
 The fearful difference of incensed kings:  
 And shall these hands, so lately purged of blood,  
 So newly joined in love, so strong in both, 240  
 Unyoke this seizure and this kind regret?  
 Play fast and loose with faith? so jest with heaven,  
 Make such unconstant children of ourselves,  
 As now again to snatch our palm from palm,  
 Unswear faith sworn, and on the marriage-bed  
 Of smiling peace to march a bloody host,  
 And make a riot on the gentle brow  
 Of true sincerity? O holy sir,  
 My reverend father, let it not be so:  
 Out of your grace, devise, ordain, impose  
 Some gentle order, and then we shall be blest  
 To do your pleasure and continue friends.

### Questions

- Place the extract in the context. (10 marks)
- Briefly describe the feelings of the following characters as portrayed in the extract:
  - Constance (04 marks)
  - Pandluph (04 marks)
- Explain the major themes that are portrayed in the extract. (08 marks)
- Explain the significance of the extract to the development of the plot of the play. (08 marks)

## SECTION B

### HENRIK IBSEN: *A Doll's House*

#### Either

- Discuss the effectiveness of the title, *A Doll's House* to the play. (33 marks)

#### Or

- Examine the portrayal of the thematic concerns developed in the play *A Doll's House*. (33 marks)

### ANTONY CHEKHOV: *The Cherry Orchard*

#### Either

- Discuss the significance of the symbol of the cherry orchard in the play, *The Cherry Orchard*. (33 marks)

#### Or:

- What lessons can one learn from the play, *The Cherry Orchard*? (33 marks)

### SOPHOCLES: *Oedipus the King*

#### Either

- With reference to the play, *Oedipus the King*, discuss the theme of fate. (33 marks)

Turn Over

- Or:**  
8. Using ample illustrations, describe the character of Oedipus in the play, *Oedipus the King*. (33 marks)

### SECTION C

#### GORGE BERNARD SHAW: *Saint Joan*

- Either:**  
9. Discuss how Joan would be received in the contemporary world referring closely to the play, *Saint Joan*. (33 marks)
- Or:**  
10. How are Joan's stunning series of victories a threat to the church in the play, *Saint Joan*? (33 marks)

#### WILLIAM CONGREVE: *The Way of the World*

- Either:**  
11. Examine how the competition between Mirabell and Fainall advance the themes in the play, *The Way of the World*? (33 marks)
- Or:**  
12. Describe the character of Mistress Mellamant in the play, *The Way of the World*. (33 marks)

#### WILLIAM WYCHERLEY: *The Country Wife*

- Either:**  
13. Discuss the themes and ideas in the play, *The Country Wife*. (33 marks)
- Or:**  
14. Comment on the importance of Horner to the development of themes in the play, *The Country Wife*. (33 marks)

### SECTION D

#### WOLE SOYINKA: *Kongi's Harvest*

- Either:**  
15. Of what significance is Segi's sacrificial gift to President Kongi in the play, *Kongi's Harvest*? (33 marks)
- Or:**  
16. How has Wole Soyinka sustained your interest in the play, *Kongi's Harvest*? (33 marks)

#### YUSUF SSERUNKUUMA: *The Snake Farmers*

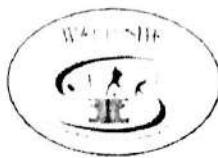
- Either:**  
17. Describe the character of Ssekadde in the play, *The Snake Farmers*. (33 marks)
- Or:**  
18. Examine the dramatic techniques the playwright has used in the play, *The Snake Farmers*. (33 marks)

#### JOHN RUGANDA: *The Floods*

- Either:**  
19. How is the play, *The Floods* a portrayal of life in the contemporary society? (33 marks)
- Or:**  
20. Describe the character of Nankya as portrayed in the play, *The Floods*. (33 marks)

END

**P310/1**  
**LITERATURE**  
**IN ENGLISH**  
**(Prose and Poetry)**  
**PAPER 1**  
**July/August**  
**3 hours**



## **WAKISSHA JOINT MOCK EXAMINATIONS**

**Uganda Advanced Certificate of Education**

**LITERATURE IN ENGLISH**

**(Prose and Poetry)**

**Paper 1**

**3 hours**

### **INSTRUCTIONS TO CANDIDATES:**

- *All sections are to be attempted.*
- *Candidates are advised to spend **70 minutes** (1hour and 10minutes) on section I and **55 minutes** on each of the section II and III.*
- *Read section I twice and then answer the questions. There is no need to read the whole paper first.*
- *Do the same for section II and then section III.*

## SECTION 1

1. Read the passage below and answer the questions after it:

So far as I have hitherto gone, I have spoken of the family being a single society. But it was a common place of the older writers on social and political subjects (basing themselves, I fancy, on Aristotle) to speak of the family as a **federal** society which united together three different sorts of groups - the *societas nuptialis* between the husband and wife; the *societas paterna* between parents and children; and the *societas erilis* between the master of the house (*erus*, as he is called in Latin) and his servants. Some of these older writers were somewhat subtle – and also it must be confessed, rather academic and dry as dust. They were so clear about the existence of these three separate societies that they would not unite the three in one, and refused to recognize the family itself as a society. Leibniz was wiser: he was willing to think that the family system contained four societies, and that it included the family itself, or the family as a whole, as well as the three divisions or provinces of the family. It is better to be a follower of Leibniz in this matter. It is dangerous to jump, as those old dry as dusts did, straight from their three societies to the State, as if there were no intervening family which held the three together independently of the State. That makes too much of the State: and anyhow it flouts our actual experience of life. The three societies **fuse** and intertwine in a single society which colours and controls them all. If I am husband and father and master (not that I like the word master), I am also one; and it is my oneness that really matters. I may divide myself, and the family to which I belong, for the purpose of analysis: but it, and I, always fly together again when the analysis is finished.

'The nuptial society' or the consortium of marriage exists in its pure or isolated state only during the days of the honeymoon. It is **palisaded** off for that brief time - Adam and Eve in a garden, from which they must necessarily depart, not because they have done any wrong, but because 'Time's winged chariot' comes and carries them off to do something right, or at any rate, something necessary, in the world that lies outside. (The man never comes back to the garden, except in memory: the woman finds another and almost equally wonderful garden when she has her new-born child in her arms.) After that time, and when those days in the garden are ended, the *societas nuptialis* begins to run **in harness** with other societies. But it still remains itself: it has still its own accommodations to make: it imposes its own discipline and demands its own system of education. The education of marriage goes to the depth of being. It involves the adjustment of two personalities and characters to a common way of life. It is full of delight and difficulty: disagreement and reconciliation; differences and compromise. It is a **microcosm** of the process which works in the great society of the State, where men have to find a common way of life by the same process of give and take. The first and primary democracy, in which debate and compromise are used to settle differences, is the institution of marriage.

Man likes a warm room, with windows happily and firmly shut, a good fire, and a pipe of tobacco. Woman loves the singing air, the open window, and the sight of driving clouds. (The pundits say that man's blood is different from that of woman, and, in particular, that the process of metabolism is more constant in him and more unstable in her. But that is to whittle the difference down to physiology and prose.) Then, again, man is apt to think that he is dying whenever he is ill: woman takes illness as something which is all in the day's work, and need not create a fuss. More important still, man is like the Athenians of old: he is always pining to hear or see some new and stirring thing: he has a sovereign and vexing importance. Woman faces the daily round and the common task, and she faces it equably. I often think that women must smile at men – the amusing, exciting, annoying, obstinate playboys of the human world. If they do, they **dissemble** their smile; and they work away steadily at their task of pinning men down to stability and the quiet ways of good sense.

Men and women, **yoked** together<sup>1</sup> for better, for worse<sup>2</sup> (but with such infinite capacities for working and pulling together for better), have to respect one another's differences. Neither is bound to grow like the other, or to imitate the other. Why should they have married at all, unless they were different from one another, and each needed the other's difference? They have to wed their differences, or to find a golden mean between them. If the man has passion for novelty (which is far from being absent though it may not be so pronounced, in the woman), let them both go out together in search of novelty: they will return together to the old ways with all the greater zest. (There is a great deal of the pendulum in us all, and we are only happy when we are swinging from the old to the new, and then back again, or from the solitude of two to the **gregariousness** of a general company – keeping, and then, once more, back again.) But it is a fault in marriage that the two should always be acting together, whether in search of novelty or in any other search. There is a necessary 'you and I' ('if you take up this, I will take up that, and then between us we shall cover the ground'). Marriages seem to be perfect when there is identity of interests and pursuits; but perhaps they are actually more perfect (if the word 'perfect' has any comparative) when there is a difference of interests and pursuits which is the difference of two complements. Of course the difference must be compatible with sympathy, and even with sharing: either must report to the other about his (or her) particular interest or pursuit, and either must report to the other's report and profit by listening. To hunt apart does not involve separate larders: 'if it did, nearly all the fun of the hunting would be gone. And some part of the hunting should always be in common. There can be no proper communication in marriage unless some things are done together - and among them not only the search for novelty, but also the cultivation of some permanent and regular habit or into the realm of music: it gives a finer edge and flavor to her enjoyment; and even if he were not greatly musical he would be a poor husband, and a poor and thrifless steward of his married days, if he did not gladly go, knowing that he will not only be giving, but may also be gaining himself in the act and moment of giving. Change the name of the habit or interest, and the wife can do the giving, and also receive the gain, in the same degree as her husband. To pursue together novelty (especially in travel); to do some hunting apart, but without forgetting to report to one another on the quarry; to pursue together some steady habit or interest- these are simple counsels, if not of perfection in marriage, at any rate of a quiet and calm **felicity**.

All this may seem to be the substitution of comradeship, co-operation and the steady hue of golden grey for the peacock's wing of romance. There was a time when a glance or a look sent gold into the skies, and made the horizon glow. Does all that come down to this – a calculated and planned rule of life, like the rule of monastery? Yes, it comes down to this in the end, if marriage is to be an institution and not a passion – a way of life, not an **iridescence**. The analogy of the monastery goes deeper than at first sight appears. The monk too has had this vision: he too has seen the horizon glow with a revelation. But he has also recognized the great virtue of stability; and he has worked out a technique of common life - which is based on the secure psychological foundations of observation and experience of human ways, and is designed to secure the permanence of the vision. If as much wisdom went into the making of a rule for the common life of marriage as has gone into the making of the rule for the monastery, there would perhaps be a greater number of happy marriages.

(Source: Nandini Nayar (2008): *Footprints 1: An Anthology of Prose, Poetry and Fiction*, Cambridge University Press India, from an essay by Ernest Barker)

### Questions

(02 marks)

- a) Give the passage a suitable title.
- b) (i) What, according to the older writers, were the three groups that made up a family unit?

(03 marks)

**Turn Over**

- (ii) How different was Leibniz from these writers and why does the author support him? (03 marks)
- c) (i) What are the contradictions that exist in marriage? (06 marks)  
(ii) Explain the lessons necessary to make marriage work. (06 marks)
- d) "Differences in interests and attitudes are the primary reason for a marriage and an important way of keeping the relationship working." Explain. (04 marks)
- e) Give the meaning of the words and phrases in bold type as used in the passage: (10 marks)
- i) federal
  - ii) fuse
  - iii) palisaded
  - iv) in harness
  - v) microcosm
  - vi) dissemble
  - vii) yoked
  - viii) gregariousness
  - ix) felicity
  - x) iridescence

## SECTION II

### 2. Read the passage below and answer the questions after it.

And yet the wondering and the shaking and the vomiting horror is not all from the inward sickness of the individual soul. Here we have had a kind of movement that should make even good stomachs go sick. What is painful to the thinking mind is not the movement itself, but the dizzying speed of it. It is that which has been horrible. Unnatural, I would have said, had I not stopped myself with asking, unnatural according to what kind of nature? Each movement and each growth, each such thing brings with itself its own nature to frustrate our future judgment. Now, whenever I am able to look past the beauty of the first days, the days of birth, I can see growth. I tell myself that is the way it should be. There is nothing that should break the heart in the progressive movement away from the beauty of the first days. I see growth, that is all I see within my mind. When I can only see, when there is nothing I can feel, I am not troubled. But always these unwanted feelings will come in the end and disturb the tired mind with thoughts that will not go away. How horribly rapid everything has been, from the days when men were not ashamed to talk of souls and of suffering and of hope, to these low days of smiles that will never again be sly enough to hide the knowledge of betrayal and deceit. There is something of an irresistible horror in such quick decay.

When I was at school, in Standard Five, one of us, a boy who took a special pleasure in showing us true but unexpected sides of our world, came and showed us something I am sure none of us has forgotten. We called him Aboliga the Frog. His eyes were like that. Aboliga the Frog one day brought us a book of freaks and oddities, and showed us his favorite among the weird lot. It was a picture of something the caption called an old manchild. It had been born with all the features of a human baby, but within seven years it had completed the cycle from babyhood to infancy to youth, to maturity and old age, and in its seventh year it had died a natural death. The picture Aboliga the Frog showed us was of the manchild in its gray old age, completely old in everything save the smallness of its size, a thing that deepened the element of the grotesque. The manchild looked more irretrievably old, far more thoroughly decayed, than any ordinary old man could ever have looked. But of course, it, too, had a nature of its own, so that only those who have found some solid ground they can call the natural will feel

free to call it unnatural. And where is my solid ground these days? Let us say just that the cycle from birth to decay has been short. Short, brief. But otherwise not at all unusual. And even in the decline into the end there are things that remind the longing mind of old beginnings and hold out the promise of new ones, things even like your despair itself. I have heard this pain before, only then it was multiplied many, many times, but that may only be because at that time I was not so alone, so far apart. Maybe there are other lonely voices despairing now. I will not be entranced by the voice, even if it should swell as it did in the days of hope. I will not be entranced, since I have seen the destruction of the promises it made. But I shall not resist it either. I will be like a cork.

It is so surprising, is it not, how even the worst happenings of the past acquire a sweetness in the memory. Old harsh distresses are now merely pictures and tastes which hurt no more, like itching scars which can only give pleasure now. Strange, because when I can think soberly about it all, without pushing any later joys into the deeper past, I can remember that things were terrible then. When the war was over the soldiers came back to homes broken in their absence and they themselves brought murder in their hearts and gave it to those nearest them. I saw it, not very clearly, because I had no way of understanding it, but it frightened me. We had gone on marches of victory and I do not think there was anyone mean enough in spirit to ask whether we knew the thing we were celebrating. Whose victory? Ours? It did not matter. We marched, and only a dishonest fool will look back on his boyhood and say he knew even then that there was no meaning in any of it. It is so funny now, to remember that we all thought we were welcoming victory. Or perhaps there is nothing funny here at all, and it is only that victory itself happens to be the identical twin of defeat.

(Source: Ayi Kwei Armah (1968): *The Beautiful Ones Are Not Yet Born*, Heinmann Educational Books, London)

#### Questions

- a) What is the passage about? (07 marks)
- b) Identify the narrator in the passage. (03 marks)
- c) Why is the narrator remembering Aboliga the Frog? (04 marks)
- d) Examine the aspects of style used in the passage. (15 marks)
- e) Analyze the tone and mood of the passage. (04 marks)

### SECTION III

3.

Read the poem below and answer the questions that follow:

#### *Song to Mukokoteni*

Mukokoteni

Mukokoteni

O my mukokoteni –

My chariot of fame

My Apollo 9 to the stars

My VC 10 to global capitals

My concord jet-liner

To dream continents and oceans

Miraculous automobile

From discarded timber

And junkyard tyre rim

Ingeniously fabricated

By Kafumba-Mutwe Afro Works

Turn Over

O my legs of vegetable and metal  
My perennial Mercedes Benz  
My ever-ready cargo plane  
My sputnik to brand new planets

My elephant of the metropolis  
My donkey of the suburbs  
My ass of the slums

O you my all-weather masterpiece  
My champion of panya roads  
My roadmaster of side-ways and backyards  
Venturing where amphibious tanks dare not  
Surviving where bulldozers break down

Ambulance of the crippled  
Taxi-cab of the dying poor –  
Into what kitchen have you not glimpsed  
Offloading opulent merchandise  
Too greasy for the blameless boot  
Of the family limousine

What matooke shambas have you not ferried  
To mansions of executive stomachs  
What miles of forest not spirited away  
To cities of charcoal mountains

O mukokoteni  
Mukokoteni  
My mukokoteni

My only granary  
Of chance cassava for supper

My ray of cosmic hope for tomorrow  
My springhead of endurance yesterday  
Never to be outdated  
By man or robot or politics –

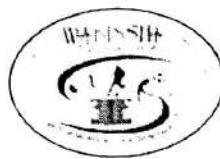
Long live you  
Under Mukokoteni Operations' Union!  
- Timothy Wangusa (Uganda)

### Questions

- a) Comment on the appropriateness of the title to the poem. (03 marks)
- b) What is the subject matter of the poem? (06 marks)
- c) Explain the meaning of the following lines as used in the poem:
  - i) Miraculous automobile  
From discarded timber
  - ii) My only granary  
Of chance cassava for supper(04 marks)
- d) Comment on the effectiveness of the poetic devices used in the poem. (15 marks)
- e) What is the attitude of the speaker towards Mukokoteni? (05 marks)

**END**

**273/1**  
**GEOGRAPHY**  
**Paper 1**  
**July /August**  
**2 $\frac{1}{2}$  hours**



**WAKISSHA JOINT MOCK EXAMINATIONS**

**Uganda Certificate of Education**

**GEOGRAPHY**

**Paper 1**

**2 hours 30 minutes**

**INSTRUCTIONS TO CANDIDATES:**

- *This paper consists of parts I and II.*
- *Part I and Section A of Part II are Compulsory.*
- *Answer only one question from Section B of Part II*
- *Any additional question(s) answered will not be marked*

*Answers to all questions must be written in the answer booklet/sheets provided.*

## PART I

### OBJECTIVE - TYPE QUESTIONS (30 MARKS)

*There are 30 compulsory questions. Each question carries one mark.  
Answers to this part must be written in the answer booklet/sheet provided.*

1. Under estimated census figures are likely to affect:
  - A. national expenditure.
  - B. national income.
  - C. national planning.
  - D. national peace
2. Intensive heat and pressure metamorphises granite to:
  - A. slates
  - B. gneiss
  - C. quartzite
  - D. graphite.
3. Secondary fracturing within the rift valley floor of East Africa formed:
  - A. fault scarps.
  - B. tilt blocks.
  - C. grabens
  - D. block mountains.
4. Which of the following is the most serious problem facing the people of Manjiya.
  - A. Soil exhaustion
  - B. Land fragmentation.
  - C. Landslides.
  - D. Soil erosion.
5. Deforestation of Bugala Island is as a result of
  - A. industrialisation.
  - B. lumbering.
  - C. cultivation.
  - D. charcoal burning.
6. Which one of the following uplands in East Africa was formed due to accumulation of lava?
  - A. Rwenzori.
  - B. Usambara.
  - C. Elgon.
  - D. Uluguru.
7. The major threat to Lukaya wetlands is
  - A. rice growing.
  - B. settlement.
  - C. sand extraction.
  - D. road construction.
8. Sahel conditions in East Africa can best be controlled by.
  - A. green revolution.
  - B. mass sensitization.
  - C. environmental conservation.
  - D. pastoral transformation.

9. Exploitation of limestone in Usukuru hills of Tororo has declined due to:
- mineral exhaustion.
  - high cost of processing.
  - infrastructure breakdown.
  - limited market.
10. Which of the following riverine features is associated with vertical erosion?
- Rapids.
  - Gorges.
  - Interlocking spurs.
  - Bluffs.
11. The major problem facing large scale industrialization in East Africa is
- inadequate skilled labour.
  - limited domestic market.
  - inadequate capital.
  - raw material shortage.
12. Presence of an Inland delta on river Nzoia is attributed to alluvial:
- deposition on river banks.
  - erosion on river banks.
  - erosion on river mouths.
  - deposition on river mouths
13. Which one of the following areas receive the least mean annual rainfall in East Africa?
- Malindi.
  - Lodwar.
  - Dodoma.
  - Mwanza.
14. The development of small hydro- electric power stations in Kenya is mainly intended to
- promote rural electrification.
  - generate power for export.
  - reduce power importation.
  - promote small scale industries.
15. Atolls are examples of ..... Rocks.
- igneous.
  - sedimentary.
  - metamorphic.
  - extrusive volcanic.
16. Which one of the following is a frontier town?
- Arua.
  - Nairobi.
  - Mombasa.
  - Malaba.
17. Marine fishing at the coast of East Africa is mainly hindered by:
- mangrove vegetation.
  - coral reefs.
  - water pollution.
  - strong winds.

**Turn Over**

18. Which one of the following hydro-power stations in East Africa is operated by an aqueduct?
- A. Isimba.
  - B. Bujagali.
  - C. Seven forks.
  - D. Mobuku.
19. The fertility of soil mainly depends on;
- A. relief.
  - B. vegetation cover.
  - C. parent rock.
  - D. biotic factor.
20. Gabions are control measures for;
- A. road accidents.
  - B. water accidents.
  - C. mass wasting.
  - D. soil exhaustion.
21. Horticulture has developed in East Africa mainly due to;
- A. high beef price.
  - B. urbanisation.
  - C. agricultural modernisation.
  - D. improved transport.
22. Which one of the following features are common in Karst areas of Nyakasura.
- A. Dykes.
  - B. Escarpments.
  - C. Plunge pool.
  - D. Stalagmites.
23. Permeability of a rock refers to the ability of a rock to;
- A. dissolve water.
  - B. retain water.
  - C. allow water through.
  - D. react with water.
24. Weather conditions caused by local winds in low lands in East Africa is;
- A. hailstorm.
  - B. thunder storm.
  - C. temperature inversion.
  - D. heavy rainfall.
25. The type of climate condition experienced in Ankole – Masaka corridor is
- A. equatorial.
  - B. montane.
  - C. semi-arid.
  - D. tropical.
26. Seasonal variation of lake Victoria is likely to affect
- A. water transport.
  - B. fishing.
  - C. tourism.
  - D. power production.

27. Break down of the railway transport to Kasese is as a result of:  
 A. political instability.  
 B. heavy floods.  
 C. ore exhaustion.  
 D. vandalisation of wagons.
28. Arusha airport has developed mainly due to:  
 A. tourism.  
 B. mining.  
 C. trade.  
 D. agriculture.
29. Virunga ranges are mainly important for;  
 A. mining.  
 B. settlement.  
 C. tourism.  
 D. cultivation.
30. The construction of the Standard Gauge Railway (SGR) line is aimed at promoting  
 A. political stability.  
 B. easing transportation.  
 C. widening markets.  
 D. industrial growth.

## PART II

### MAPWORK, PHOTOGRAPH INTERPRETATION, FIELD WORK AND EAST AFRICA.

Answer **four** questions from part **II**, including question **1, 2 and 3** which are compulsory.

#### SECTION A

##### 1. *Compulsory Question : MAPWORK* (20 Marks)

Answer **all** parts of this question.

Study the EAST AFRICA 1:50,000 UGANDA: PAKWACH map extract part of sheet 29/2 series Y732 Edition 2-U.S.D and answer the questions that follow.

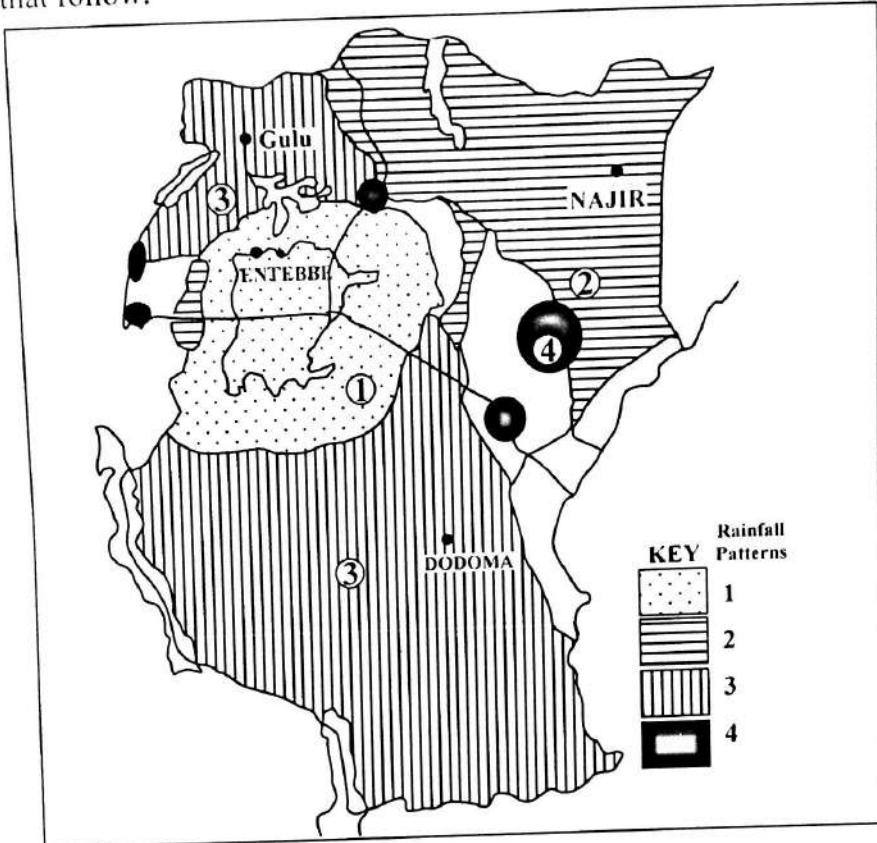
- |         |  |            |
|---------|--|------------|
| (a) (i) | Name the man-made features at grid reference 321726.   | (01 mark)  |
| (ii)    | State the grid reference of Angala river confluence.   | (01 mark)  |
| (b) (i) | Calculate the average height of Pakwach map extract.   | (02 marks) |
| (ii)    | State the global location of Pakwach map extract.  | (02 marks) |
| (c)     | Draw a relief section of the area between Easting 22 and 30 along Northing 69 and on it mark and name:<br>(i) Communication routes.<br>(ii) Drainage features.<br>(iii) Settlements.<br>(iv) Vegetation types. | (10 marks) |
| (d) (i) | Name any two social services in the map extract.   | (02 marks) |
| (ii)    | Describe the relationship between settlement and provision of social services.   | (02 marks) |

**Turn Over**

## SECTION B: EAST AFRICA

Answer only one question from this section.

4. Study the sketch map of East Africa showing selected rainfall patterns and answer the questions that follow.



- (a) Name the climatic regions in the rainfall patterns marked.
- (i) 1
  - (ii) 2
  - (iii) 3
  - (iv) 4
- (04 marks)
- (b) Explain the factors responsible for the rainfall pattern in;
- (i) 1
  - (ii) 2
- (08 marks)
- (c) Outline the effects of the rainfall pattern in b(ii) on the people living in the area.  
(04 marks)
- (d) Suggest measures that can be taken by the East Africa countries to reduce  
the effects stated in (c) above.  
(04 marks)
5. (a) Draw a sketch map of East Africa and on it mark and name;
- (i) Mining centers: Bamburi, Tororo and Mwadui.
  - (ii) Airports: Arusha and Entebbe.
  - (i) Inland ports: Kisumu and Port bell
  - (ii) The Uganda railways.
- (09 marks)

**Turn Over**

- (b) (i) Identify one mineral exploited in each of the mining centers stated in a (i) above. (03 marks)
- (ii) Describe the physical factors which have favoured the exploitation of the mineral identified in b(i) above. (04 marks)
- (c) Outline the effects of mining on the environment in East Africa. (04 marks)
6. (a) Draw a sketch map of East Africa and on it mark and name:
- (i) Miombo wood lands.
  - (ii) two montane forests.
  - (iii) Mangrove forests.
  - (iv) Namanve and Webuye planted forests.
- (06 marks)
- (b) Describe the characteristics of;
- (i) Miombo woodlands.
  - (ii) Mangrove forests.
  - (iii) Planted forests.
- (06 marks)
- (c) Explain the problems limiting effective utilization of forests in East Africa. (06 marks)
- (d) Outline the negative effects of forest utilization on the environment. (02 marks)

7. Study the table below showing industrial output in 2015 and answer the questions that follow.

| Product      | Percentage quantity of output |                 |                 |
|--------------|-------------------------------|-----------------|-----------------|
|              | Uganda                        | Kenya           | Tanzania        |
| Textile      | -                             | 18.3            | 21.2            |
| Beverage     | 9.3                           | 11.4            | 10.3            |
| Cement       | 23.1                          | -               | 24.5            |
| Diary        | 14.8                          | 18.5            | 15.6            |
| Agro-produce | 38.3                          | 25.5            | 28.4            |
| Total        | 1,339,200<br>tones            | 4,533,000 tones | 3,755,600 tones |

*Adopted from 2018 African development indicator, The world bank pp. 73-97*

- (a) (i) Calculate the relative importance of :
- Textile output in Uganda.
  - Cement output in Kenya.
- (02marks)
- (ii) Calculate the output value of Agro-produce in:
- Uganda.
  - Tanzania.
- (02marks)
- (b) Draw a pie chart to show relative importance of Kenya's production in 2015. (08 marks)
- (c) Explain the conditions favouring industrial production in Kenya. (06 marks)
- (d) Outline the environmental effects of the industrial growth in East Africa. (02 marks)

**END**



## **WAKISSHA JOINT MOCK EXAMINATIONS**

**Uganda Advanced Certificate of Education**

**PHYSICS**

**Paper 1**

**2 hours 30 minutes**

### **INSTRUCTIONS TO CANDIDATES:**

- Answer five questions, including at least one, but not more than two from each of the Sections A, B and C.
- Any additional question(s) answered will not be marked.
- Non programmable silent scientific calculators may be used.

**Assume where necessary:**

|                                       |          |   |   |
|---------------------------------------|----------|---|---|
| Acceleration due to gravity           | $g$      | = | $9.81 \text{ ms}^{-2}$                                |
| Electron charge                       | $e$      | = | $1.6 \times 10^{-19} \text{ C}$                       |
| Electron mass                         |          | = | $9.11 \times 10^{-31} \text{ kg}$                     |
| Mass of earth                         |          | = | $5.97 \times 10^{24} \text{ kg}$                      |
| Planck's constant,                    | $h$      | = | $6.6 \times 10^{-34} \text{ Js}$                      |
| Stefan's – Boltzmann's constant,      | $\sigma$ | = | $5.67 \times 10^{-8} \text{ W m}^{-2} \text{ K}^{-4}$ |
| Radius of the earth                   |          | = | $6.4 \times 10^6 \text{ m}$                           |
| Radius of the sun                     |          | = | $7.0 \times 10^8 \text{ m}$                           |
| Radius of earth's orbit about the sun |          | = | $1.5 \times 10^{11} \text{ m}$                        |
| Speed of light in a vacuum            |          | = | $3.0 \times 10^8 \text{ m s}^{-1}$                    |
| Specific heat capacity of water       |          | = | $4,200 \text{ J kg}^{-1} \text{ K}^{-1}$              |
| Specific latent heat of fusion of ice |          | = | $3.34 \times 10^5 \text{ J kg}^{-1}$                  |
| Universal gravitational constant,     | $G$      | = | $6.67 \times 10^{-11} \text{ N m}^2 \text{ kg}^{-2}$  |
| Avogadro's number                     | $N_A$    | = | $6.02 \times 10^{23} \text{ mol}^{-1}$                |
| Density of mercury                    |          | = | $13.6 \times 10^3 \text{ kg m}^{-3}$                  |
| Charge to mass ratio,                 | $e/m$    | = | $1.8 \times 10^{11} \text{ C kg}^{-1}$                |
| The constant $1/4\pi\epsilon_0$       |          | = | $9.0 \times 10^9 \text{ F}^{-1} \text{ m}$            |
| Density of water                      |          | = | $1000 \text{ kg m}^{-3}$                              |
| Gas constant                          | $R$      | = | $8.31 \text{ J mol}^{-1} \text{ K}^{-1}$              |
| Wien's displacement constant          |          | = | $2.90 \times 10^{-3} \text{ m K}$                     |
| Surface tension of soap solution      |          | = | $2.0 \times 10^{-2} \text{ N m}^{-1}$                 |
| Electron charge to mass ratio, $e/m$  |          | = | $1.8 \times 10^{11} \text{ C kg}^{-1}$                |
| One electron volt, (eV)               |          | = | $1.6 \times 10^{-19} \text{ J}$                       |

## SECTION A

1. (a) (i) Define **linear momentum**. (01 mark)
- (ii) State the **law of conservation of linear momentum**. (01 mark)
- (iii) Show that the law of conservation in (a) (ii) above follows from Newton's laws of motion. (04 marks)
- (b) A man whose weight is 490.5 N, jumps onto the ground from a 2.5 m high wall.
- (i) Explain why he has to bend his knees when landing on the ground. (02 marks)
- (ii) Calculate the force with which his legs hit the ground if his body comes to rest in 0.5 s on reaching the ground. (04 marks)
- (c) (i) Distinguish between **perfectly elastic** and **perfectly inelastic** collisions, and give **one** example of each. (03 marks)
- (ii) Two bodies each of mass  $m_1$  and  $m_2$  initially moving with velocities  $\mathbf{u}_1$  and  $\mathbf{u}_2$  respectively collide perfectly inelastically. Show that the loss in kinetic energy is given by the expression:  
$$\frac{m_1 m_2 (\mathbf{u}_1 - \mathbf{u}_2)^2}{2(m_1 + m_2)}$$
 (04 marks)
- (iii) State any **two** applications of the law of conservation of linear momentum. (01 mark)
2. (a) Define the following terms as applied to circular motion:
- (i) **centripetal acceleration**. (01 mark)
- (ii) **angular velocity**. (01 mark)
- (b) (i) What is the purpose of banking a track? (01 mark)
- (ii) Derive an expression for the angle of banking for a case of a car of mass  $M$  moving with a speed  $v$  round a banked track of radius  $r$ . (04 marks)
- (iii) A car moves round a circular track of radius 65 m which is banked at an angle  $\tan^{-1} 5/12$  to the horizontal. Find the speed at which the car should be driven for no tendency to slip. (03 marks)
- (c) (i) State **Kepler's laws** of gravitation. (03 marks)
- (ii) Describe an experiment you would carry out in the laboratory to determine the universal gravitational constant. (05 marks)
- (iii) A body of mass 10 kg is first weighed on a balance at the top of a tower 30m high and later transferred to the ground and is reweighed. Calculate the difference in the weights of the body. (02 marks)

3. (a) (i) Define **surface tension**. (01 mark)
- (ii) Briefly describe an experiment you would use to show that surface tension of a liquid decreases with increase in temperature. (03 marks)
- (iii) State how **one** other factor affects surface tension of a liquid. (02 marks)
- (b) (i) Derive an expression for pressure difference across a soap bubble in air. (04 marks)
- (ii) Two soap bubbles of radii 1.5 cm and 3.0 cm respectively coalesce to form a single bubble under isothermal conditions. Calculate the excess pressure inside the resulting soap bubble. (03 marks)
- (c) (i) Define **coefficient of viscosity**. (01 mark)
- (ii) Explain briefly how temperature affects viscosity of a liquid. (03 marks)
- (d) A liquid of negligible viscosity flows steadily through a pipe whose cross sectional area at one point is  $15 \text{ cm}^2$  at a velocity of  $0.5 \text{ ms}^{-1}$ . Find the pressure difference between this point and another point whose cross sectional area is  $3.0 \text{ cm}^2$ . (03 marks)
4. (a) What is meant by the following terms as applied to mechanical properties of materials?
- (i) **elasticity**. (01 mark)
- (ii) **force constant**. (01 mark)
- (b) A wire of length  $l$  and cross sectional area  $A$  has a force constant  $k$ . The wire is stretched to a length  $l + x$  by a constant force  $F$ . Show that:
- (i) the force constant  $k = EA/l$ , where  $E$  is Young's modulus of the material of the wire. (03 marks)
- (ii) the energy stored per unit volume is  $\frac{1}{2} E(x/l)^2$ . (03 marks)
- (c) One end of a copper wire of length 1.0m and diameter 0.5mm is welded to a steel wire of length 0.5m and diameter 0.8mm, while its other end is fixed onto a rigid support. If a load of 12kg is suspended from the free end of the steel wire, calculate the:
- (i) extension which results. (04 marks)
- (ii) energy stored in the compound wire. (03 marks)
- (d) (i) State **Bernoulli's principle**. (01 mark)
- (ii) Explain why the roof of a building is likely to be blown off when a strong wind blows over it. (04 marks)

## SECTION B

5. (a) Define the following terms as applied to heat: (01 mark)
- (i) **Heat capacity.** (01 mark)
  - (ii) **Cooling correction.** (01 mark)
- (b) (i) Describe an experiment to determine the specific heat capacity of a liquid using the continuous – flow method. (05 marks)
- (ii) In the above experiment, state why the temperature differences are kept constant. (01 mark)
- (ii) State **three advantages** of the continuous flow method over the method of mixtures. (03 marks)
- (c) In a continuous – flow experiment, a steady difference of temperature of  $2.0^{\circ}\text{C}$  is maintained when the rate of liquid flow is  $20 \text{ gs}^{-1}$  and the power of the electrical heater is 40 W. When the liquid flow rate is adjusted to  $75 \text{ gs}^{-1}$ , 80 W of electrical power is required to maintain the same temperature difference.  
Calculate the total heat energy lost in 5 minutes. (05 marks)
- (d) (i) What is meant by **latent heat of fusion of ice?** (01 mark)
- (ii) Explain briefly why ice tends to stick onto a sweaty hand. (03 marks)
6. (a) (i) Distinguish between an **isothermal** and **adiabatic** changes. (01 mark)
- (ii) State **two conditions** for an adiabatic process to take place. (02marks)
- (iii) State **two examples** of an adiabatic process. (02 marks)
- (b) An ideal gas is expanded adiabatically to a final pressure of  $1.0 \times 10^7 \text{ Pa}$ , when originally it had a pressure of  $2.0 \times 10^6 \text{ Pa}$  and volume of 3.0 litres at a temperature of  $50^{\circ}\text{C}$ .  
Calculate the:  
(i) number of moles of the gas. (03 marks)  
(ii) final temperature of the gas. (04 marks)  
(Take ratio of the specific heat capacity at constant pressure to that at constant volume to be 1.4).
- (c) (i) Define **molar heat capacity at constant pressure.** (01 mark)
- (ii) Derive the expression for the difference between the molar heat capacity at constant pressure and that at constant volume for one mole of an ideal gas. (05 marks)
- (d) Explain briefly why a gas heats up when it is compressed. (02 marks)

7. (a) (i) What is meant by a **black body**? (01 mark)  
(ii) State the **laws of black body radiation**. (02 marks)
- (b) Using the same axes, sketch graphs to show the distribution of energy in the spectrum of radiation from a black body at three different temperatures, and explain their features. (05 marks)
- (c) The tungsten filament of a lamp has an operating temperature of  $3500^{\circ}\text{C}$ . If the effective surface area of the filament is  $0.42 \text{ cm}^2$  and assuming that the energy radiated is 29 % that from a black body in similar conditions, calculate the:  
(i) power of the lamp. (03 marks)  
(ii) calculate the frequency of radiation emitted with maximum intensity. (03 marks)
- (d) (i) Explain, using **molecular theory of matter**, the mechanism of thermal conduction in insulators. (03 marks)  
(ii) Briefly account for the fact that metals are better conductors of heat than insulators. (03 marks)

### SECTION C

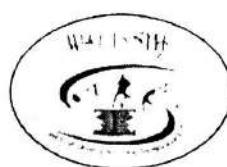
8. (a) Define the following terms:  
(i) **Photoelectric emission**. (01 mark)  
(ii) **stopping potential**. (01 mark)
- (b) Describe an experiment to determine the stopping potential of a given metal surface. (05 marks)
- (c) A certain metal is illuminated by radiation of wavelength 145 nm. If it has a work function of 2.0 eV, calculate the:  
(i) maximum speed of the photoelectrons. (03 marks)  
(ii) threshold frequency. (02 marks)
- (d) (i) What are **x – rays**? (01 mark)  
(ii) Sketch a graph of intensity against wavelength of x – rays from an x – ray tube and describe its main features. (04 marks)  
(iii) Calculate the maximum frequency of x – rays emitted by an x – ray tube with an operating voltage of 40 kV. (03 marks)
9. (a) (i) Define **background radiation**. (01 mark)  
(ii) State the **three main sources** of background radiation. (02 marks)  
(iii) Give **two examples** of background radiation. (01 mark)

**Turn Over**

- (01 mark)
- (b) (i) State the **law of radioactive decay**.  
(ii) Show that the half-life  $T_{\frac{1}{2}}$  of a radioactive material is related to the decay constant  $\lambda$  by the expression  $\lambda T_{\frac{1}{2}} = \ln 2$ . (02 marks)  
(iii) A radioisotope of strontium of half-life 28 years providing a source of beta particles has been in use for some time. If originally 5  $\mu\text{g}$  of strontium were present, find the number of atoms remaining after 15 years of use. (04 marks)
- (c) (i) Describe the structure and mode of operation of the **scintillation counter**. (05 marks)  
(ii) State **two advantages** of the scintillation counter over the Geiger – Muller tube. (02 marks)
- (d) State **one industrial** use and **one medical** use of radioactivity. (02 marks)
10. (a) (i) Define **mass defect**. (01 mark)  
(ii) State the mathematical relation between **mass defect** and **binding energy**. (01 mark)
- (b) (i) Distinguish between **nuclear fusion** and **nuclear fission**. (02 marks)  
(ii) State and explain **two** conditions necessary for nuclear fusion to occur. (04 marks)  
(iii) Sketch a graph of binding energy per nucleon against mass number, showing its key features. (02 marks)
- (c) Calculate the binding energy per nucleon in joules of boron  ${}^{10}_5B$  given that:  
Mass of a proton = 1.0080 U  
Mass of a neutron = 1.5087 U  
Mass of  ${}^{10}_5B$  = 10.0129 U  
1 U =  $1.66 \times 10^{-27}$  kg (05 marks)
- (d) (i) State **Bohr's postulates** of the atom. (02 marks)  
(ii) Explain the occurrence of the emission line spectrum. (03 marks)

**END**

**P515/2**  
**PRINCIPLES**  
**AND PRACTICES**  
**OF AGRICULTURE**  
**PAPER 2**  
**July/August**  
**3 hours**



**WAKISSHA JOINT MOCK EXAMINATIONS**

**Uganda Advanced Certificate of Education**

**PRINCIPLES AND PRACTICES OF AGRICULTURE**

**Paper 2**  
**3 hours**

**INSTRUCTIONS TO CANDIDATES:**

- *This paper consists of sections A, B, C, D and E.*
- *Answer Question 1 in section A and four other questions selecting one question from each of the sections B, C, D and E.*
- *Any additional question(s) answered will not be marked.*

## SECTION A

### COMPULSORY QUESTION (20 MARKS)

1. An experiment was carried out to investigate the effects of three feeding regimes on milk composition from a herd. The results are shown in the table below, study it and answer the questions that follow. The mean milk composition data was obtained from research work done on other similar dairy herds.

| MILK YIELD | MEAN MILK COMPOSITION (%) | FEEDING REGIMES |     |     |
|------------|---------------------------|-----------------|-----|-----|
|            |                           | A               | B   | C   |
| Water      | 87.0                      | 90              | 78  | 88  |
| Solids     | 13.0                      | 12              | 15  | 14  |
| Fat        | 4.0                       | 3.0             | 4.8 | 5.0 |
| Proteins   | 3.4                       | 3.0             | 4.5 | 4.6 |
| Lactose    | 4.8                       | 4.2             | 4.9 | 5.0 |
| Minerals   | 0.8                       | 0.5             | 1.0 | 1.2 |

Fig.1 Milk Composition from Three Feeding Regimes of a Group of Dairy Herd

- From the data given, work out the average milk composition of the herd from the three feeding regimes. (03marks)
- Explain how the average composition differs from the mean milk composition. (03marks)
- Explain what would happen to calves fed on milk from herds exclusively restricted on feeding regime A. (06marks)
- Giving a reason in each case, give the identities of the types or class of feeds represented in A and B. (04marks)
- Explain **four** other factors that could have influenced the results obtained from the above experiment. (04marks)

## SECTION B

### CROP PRODUCTION (20 MARKS)

- Discuss the economic importance of fungi in agriculture. (10 marks)
  - What characteristics have made fungi successful in nature? (10 marks)

3. (a) Explain how organic manures contribute to soil productivity. (08marks)  
(b) Describe the soil management practices to adopt in order to maintain the required level of organic matter in the soil. (12marks)

## SECTION C

### ANIMAL PRODUCTION (20MARKS)

4. (a) Describe the desirable characteristics you would look for while selecting a poultry breed for commercial production. (12 marks)  
(b) What recommendation would you give to the farming communities in order to improve the productivity of the local poultry breeds? (08marks)
5. (a) Describe the steps involved in harvesting and processing of honey for Marketing. (08marks)  
(b) Explain the factors you would consider while locating a site for an apiary. (12 marks)

## SECTION D

### AGRICULTURAL ENGINEERING AND FARM STRUCTURES (20MARKS)

6. (a) Outline the advantages of using draught technology. (08 marks)  
(b) What characteristics are possessed by areas where draught technology has been successful? (12 marks)
7. (a) Describe how tick control can be achieved through dipping. (12 marks)  
(b) Describe the structural requirements of a good cattle dip. (08 marks)

## SECTION E

### AGRICULTURAL ECONOMICS (20MARKS)

8. (a) What affirmative action is necessary in the encouragement of women participation in agricultural production? (08 marks)  
(b) Explain how women can benefit when they join farmers' organisations. (12 marks)
9. (a) Explain the meaning of e-marketing. (02 marks)  
(b) What are the advantages and limitations of e-marketing in the agricultural sector? (10 marks)  
(c) Suggest how farmers can adopt and exploit e-marketing principles during the marketing of their produce. (08marks)

END

**P230/1**  
**ENTREPRENEURSHIP**  
**EDUCATION**  
**Paper 1**  
**July/August**  
**3 hours**



**WAKISSHA JOINT MOCK EXAMINATIONS**

**Uganda Advanced Certificate of Education**

**ENTREPRENEURSHIP EDUCATION**

**Paper 1**

**3 hours**

**INSTRUCTIONS TO CANDIDATES:**

- *This paper consists of two sections, A and B.*
- *Answer five questions only.*
- *Section A is compulsory. Answers to this section should be precise and concise.*
- *Answer four questions from section B.*
- *Credit will be given for use of relevant diagrams and illustrations.*
- *Any additional question(s) answered will not be marked.*

## **SECTION A (20 MARKS)**

*Answer all questions in this section*

1. (a) (i) What is meant by the term **entrepreneurial motivation?**(01 mark)  
(ii) Give any **three** determinants of entrepreneurial motivation. (03 marks)
- (b) Outline **four** ways in which entrepreneurs protect business ideas. (04 marks)
- (c) (i) Distinguish between **Micro enterprises** and **small enterprises** (02 marks)  
(ii) State any **two** benefits enjoyed by entrepreneurs operating formal businesses. (02 marks)
- (d) Mention any **two**;  
(i) Strategies required for effective time management. (02 marks)  
(ii) Indicators of time wastage in business. (02 marks)
- (e) State any **two**;  
(i) Contents of an executive summary. (02 marks)  
(ii) Aims of drafting an executive summary. (02 marks)

## **SECTION B (80 MARKS)**

*Answer any four questions from this section.*

2. (a) Describe the principles of effective communication. (10 marks)  
(b) What techniques should be used by entrepreneurs to improve listening skills? (10 marks)
3. (a) Examine the social-cultural and political factors hindering entrepreneurial intentions and attitudes. (14 marks)  
(b) What are the social responsibilities of a business to the community? (06 marks)
4. (a) Analyse the steps involved in determining the viability of a potential business opportunity. (10 marks)  
(b) Justify the need for carrying out financial viability study. (10 marks)
5. (a) Describe the marketing decision areas considered by entrepreneurs when making marketing programmes. (10 marks)  
(b) What marketing strategies do entrepreneurs adopt to promote their sales? (10marks)
6. (a) What instances may lead to an increase in the worker's pay? (10 marks)  
(b) Explain the key elements of personnel management. (10 marks)
7. (a) Account for the popularity of direct taxes over indirect taxes. (12 marks)  
(b) What measures are being taken to increase the level of tax compliance in your country? (08 marks)

**END**

P615/2  
**FINE ART**  
**PAPER 2**  
**Study of a Living Person**  
**and Imaginative Composition**  
**(in colour)**  
**July/August**  
**5 hours**  
  
ALT - A    **3 $\frac{1}{4}$  hours**  
ALT - B    **5 hours**



## **WAKISSHA JOINT MOCK EXAMINATIONS**

**Uganda Advanced Certificate of Education**

**FINE ART**

**STUDY OF A LIVING PERSON AND IMAGINATIVE COMPOSITION**  
**(IN COLOUR)**

**Paper 2**

### **INSTRUCTIONS TO CANDIDATES.**

*This paper is for the use by the supervisor only in consultation with the Art teacher*  
*The paper consists of **two** alternatives **A** and **B**. Candidates are free to choose either*  
*Alternative **A** or Alternative **B**.*

*This paper is to be given to the Candidates on the day of the examination to allow for*  
*sketching for Alternative **B** between 9:00 – 11:00am. The sketches for Alternative **B***  
*should accompany the final work which will take **3 hours** in the afternoon.*

#### **Note:-**

*Candidates taking Alternative **A** (Living person) do not have a sketching session in*  
*the morning but will start the paper straight away in the morning.*

*The model of Alternative **A** should pose for 30 minutes and rest for 5 minutes at*  
*intervals.*

*Candidates should sit closer to the model.*

*Supervisors are requested to ensure that candidates write clearly the number of the*  
*question chosen, their name and school name on the top right-hand corner of the front*  
*of the paper in an area measuring 5cm wide by 12cm long.*

*For Alternative **B**, you are required to make an original composition based on one of*  
*the subjects given.*

*N.B: Candidates must be instructed that ruling by any means is forbidden.*

## **ALTERNATIVE A.**

### **The study of the living person.**

#### **Option 1: Full figure.**

A bare footed model wearing a vest and trouser sits on a chair with its back towards the candidates and he/she faces the candidates directly; He/she rests his/her hands on the back of the chair.

The right hand holds the left hand elbow from below, as the left hand holds the right hand elbow from above. The model stretches out the legs forward on either side of the front stands of the chair.

Candidates draw the full figure.

#### **Option 2: Head including torso.**

A model dressed in a short sleeved shirt/ blouse sits on a chair behind a table. Both elbows rest comfortably on top of the table while both arms assume an upright but angled position such that the palm of the right hand covers that of the left hand. The model then stretches slightly forward and rests his/her chin on the right palm.

Candidates study the model from the table upwards.

Candidates draw the upper part of the model including the top of the table.

## **ALTERNATIVE B.**

### **Original imaginative composition in colour.**

Time:        2hrs; Sketching.

              3hrs; Practical test.

Attempt only **one** subject out of the alternatives given below.

1. The storm.
2. Work at a landing site.
3. The unwanted visitor.
4. Love.
5. Displaced persons arrive at a camp carrying their few possessions.
6. People are seen struggling to board a taxi.
7. The COVID 19 lock down.
8. At last.

**END**

**P310/3**

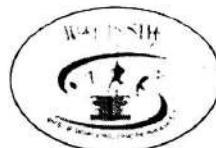
**LITERATURE  
IN ENGLISH**

**(Novels)**

**PAPER 3**

**July/August**

**3 hours**



**WAKISSHA JOINT MOCK EXAMINATIONS**

**Uganda Advanced Certificate of Education**

**LITERATURE IN ENGLISH**

**NOVELS**

**Paper 3**

**3 hours**

**INSTRUCTIONS TO CANDIDATES:**

- *This paper consists of four sections A, B, C and D*
- *Candidates must answer three questions in all. One question must be chosen from section B and any two others from sections A, C, and D.*
- *Not more than one question may be chosen from one section.*
- *Any additional question(s) answered will not be marked.*

## SECTION A

### JANE AUSTEN: Pride and Prejudice.

**Either:**

1. Discuss Jane Austen's criticism of the way money and property influence personal relationships in her novel, *Pride and Prejudice*. (33 marks)

**Or:**

2. Describe the character of Darcy in the novel, *Pride and Prejudice*. (33 marks)

### THOMAS HARDY: Tess of the D'Urbervilles.

**Either:**

3. Examine the theme of nature as shown in the novel *Tess of the D'Urbervilles*. (33 marks)

**Or:**

4. Describe the character of Angel Clare in the novel *Tess of the D'Urbervilles*? (33marks)

### CHARLES DICKENS: Great Expectations.

**Either:**

5. In what ways is Estella a true disciple of Miss Havisham? How does this change as the novel, *Great Expectations* progresses? (33 marks)

**Or:**

6. Discuss the theme of social inequality in the novel, *Great Expectations*. (33 marks)

## SECTION B

### 7. MONGO BETI: The Poor Christ of Bomba.

It was this morning that I realized!

It was Zacharia who came to wake me. I couldn't have woken up in time by myself. Zacharia asked me: 'Hey! What's up with you today?'

I got up and Zacharia said I was very late and he would prepare the altar while I washed.

It still wasn't quite light. Catherine brought me water in a basin off her own bat and told me to wash myself in and hurry.

Zacharia said to Catherine as he went out: 'Get yourself out of here before the Father comes this way. He's in the chapel at the moment, but you never know.'

Zacharia went out, but Catherine didn't go at once. She watched me while I pulled on my drawers under my shirt, because I didn't want to wash myself naked in front of her.

I had pulled on my drawers and was getting ready to wash. I was tired and a bit clumsy, like a drunkard. Catherine came up to me. She took me by the shoulders as my mother used to and then took off my drawers. I was stunned, but I let her do as she wished. She washed me carefully, especially between my thighs. Then she dried me very thoroughly. She put my clothes on. Then she washed my left foot, dried it and put my shoe on. She did the same thing with my right foot. She tied the laces of my shoes as if I had been a child her child. She buttoned me up from top to toe. She sniffed me for a long time, as if I had let off a bad smell. I was going to serve Mass, but just as I was going out Catherine kissed me on the cheek and said: 'Don't worry about your old Father, he's getting on fine.'

I was clumsy in serving the Mass: I was so sleepy. However, I couldn't afford to make a mistake, and I don't think I did. I thought about what Catherine had done the night before and I looked at the Reverend father: he was as white as a sheet. His face was strangely pale in the wan light of the candles which burned on the altar. He had shaved off his beard and I scarcely recognized him.

I did not take communion.

In the sacristy I watched the Father take off his ornaments and he was wearing a black soutane. Ever since I became a boy at the mission I had never seen him wearing a black soutane.

He must have recovered from yesterday's accident, but he was terribly white. He had never frightened me so much and I began to wonder why. It must have been because of his colour and of Catherine! Every moment I expected him to reproach me for what I had done with Catherine the night before. It seemed to me sometimes that he must know about it, that he couldn't know about. And I had to try very hard to stop believing this. I came out of the chapel without helping at the unusual palaver with the communicants.

At lunch I had the feeling that it wasn't him I was serving, that it was some new priest just arrived from goodness knows where, someone I didn't know. I was expecting him to ask questions to find out if I was stupid or clever, good or bad, honest or thievish. I expected him to ask me dirty questions, as many white priests passing through the mission at Bomba had already done. I asked myself why he had put on that funeral black soutane, why he had shaved off his beard, why he suddenly wanted to look younger. However, he wasn't as pale as formerly. His colour gradually returned, but I didn't recognize him any the better for it.

### Questions

- a) Place the passage in its context. (08 marks)
- b) Describe the narrator's feelings as portrayed in the extract. (08 marks)
- c) Explain the major themes that are portrayed in the extract. (08 marks)
- d) Explain the significance of the extract to the rest of the novel. (10 marks)

### 8. NGUGI WA THIONG'O: *Devil on the Cross*

Wariinga spoke to herself out loud: "Local and international thieves gathered in the same liar, debating ways and means of depriving the whole nation of its rights – that's a wonder that has never been seen before! That's like a child planning to rob its mother and inviting others to join in the crime! It has certainly been said that there are two worlds..."

Before she could complete the thought, Wariinga heard a voice say: "...and there's a third, a revolutionary world."

Wariinga was startled. She looked about her but could see no one. With sleepy eyes she could make out only the green grass of the golf course as it spread out before her, rolling up and down, losing itself in tiny bushes on the horizon. Wariinga was afraid. She tried to stand up, but she felt tied to the ground and to the tree by invisible wires of fatigue. She gave up the attempt. And suddenly she felt herself completely free of fear, and she said to herself: come what may, I am going to stop running away from life's struggles. With great courage she asked the invisible voice: 'Who are you?'

Voice: I am a roaming spirit. I walk about the earth, planting the tree that grows the fruit of the knowledge that enables him who eats it to tell good from evil.

Waringa: The tempter?

Voice: Oh of course, you used to be a woman of the church. The church of the Holy Rosary in Nakuru, wasn't it?

Wariinga: So?

Voice: That's how you guessed who I am so quickly.

Wariinga: I don't know you.

Voice: Are you going to deny me, you have always tried to crucify me on the cross.

Wariinga: I said I didn't know you. Who are you?

Voice: I told you I am the roaming spirit who distributes the knowledge that enables men to tell the difference between good and evil. I am also a tempter and judge.

Waringa: Tempter and judge?

Voice: Yes, of souls.

Wariinga: And what are you doing here? Or are you planning to try the souls of those who are competing in the art of stealing and rubbing?

Voice: And you, what are you doing here? He who keeps the company of the corrupt becomes corrupted.

Wariinga: I came here to see a truly an amazing sight –

Voice: Is there a difference between a thief and a man who looks on?

Wariinga: Ilmorog is home.

Voice: Why is it home to you?

Wariinga: My father and mother...Our home...Its home because my home and family are there.

Voice: Big deed make for big mouth, but a big mouth does not make for big deeds...

Wariinga: What are you trying to say? That Ilmorog is not my home?

Voice: Those who looked at Ilmorog as their home showed their loyalty through Their actions. When they saw their home burning, they cried out for help. They went to seek help.

Wariinga: Who are those people?

Voice: Wangari and Muturi – didn't you know?

Wariinga: I had nowhere to turn.

Voice: Because you are neither hot nor cold. You said just now that there are two worlds.

Wariinga: I was only repeating a saying.

Voice: You don't know which the two worlds are?

Wariinga: The two worlds? No!

Voice: But you claim to be educated.

Wariinga: Just Cambridge, EACE when I was young I used to dream of learning all there was to know in the world. I wanted to climb the mountain of knowledge, the highest mountain of knowledge, the highest mountain on Earth, to climb and climb until I stood on the highest peak, the whole Earth below me. But today my education can't even fill one stomach for a day.

### **Questions**

- Place the extract in the context. (08 marks)
- Describe Waringa's feelings as portrayed in the extract. (06 marks)
- Comment on the narrative techniques used in the extract. (10 marks)
- What is the significance of the extract to the rest of the novel? (10 marks)

9. IVAN TUNGENEV: *Fathers and Sons*

"Nikolai Petrovich," Fenechka's voice rang out nearby. "Where are you?"

He shuddered. He felt neither pain nor shame ... He'd never even allow the possibility of comparison between his wife and Fenechka, but regretted that she'd come to look for him. Her voice summoned him back at once: his gray hair, his age, his present . . . The magical world he'd already entered, arising from dim mists of the past, was shaken and then vanished.

"Over here," he replied. "I'm coming. You go on ahead." "There they are, those traces of gentry mentality" flashed through his mind. Fenechka looked into the pavilion and glanced at him in silence, then disappeared: meanwhile he was surprised to notice that night had fallen while he was sitting there dreaming. Everything around him had grown dark and quiet, and Fenechka's face appeared before him, so small and pale. He stood up, wanting to return home, but the emotions stirring in his heart couldn't be calmed; he began pacing slowly around the garden, first gazing sadly at the ground under his feet, then raising his eyes to the sky, where swarms of stars were already twinkling. He paced a great deal, until he was quite exhausted, but his agitation, a vague, searching, mournful agitation, couldn't be appeased. Oh, how Bazarov would've made fun of him, if only he'd known what he was feeling at that moment! Arkady too would judge him harshly. He, a forty-four-year-old man, an agronomist and landowner, with tears welling up in his eyes, senseless tears; this was a hundred times worse than playing the cello.

Nikolai Petrovich continued to pace and couldn't resolve to return home, to that peaceful and comfortable nest that looked at him so invitingly with all its illuminated windows: he was unable to part with the darkness, the garden, the fresh air in his face, and his grief, his agitation. . . .

At a bend in the path he met Pavel Petrovich.

"What's wrong?" he asked Nikolai Petrovich. "You're pale as a ghost; you must be ill. Why don't you go to bed?"

Nikolai Petrovich explained his state of mind briefly, then moved on. Pavel Petrovich walked to the end of the garden, also grew thoughtful, and also raised his gaze to the sky. But nothing was reflected in his handsome dark eyes except the stars.

He hadn't been born a romantic, and his fastidiously dry and passionate soul, with its touch of French misanthropy, didn't even know how to dream . . .

"Do you know what?" Bazarov said to Arkady that very evening. "I've just had a splendid idea. Today your father said he's received an invitation from your illustrious relative. Your father isn't going; why don't you and I set off for \*\*\*: you know, that gentleman's invited you, too. You see how fine the weather is now; let's go for a ride and have a look at the town. We'll spend five or six days there, and that's that!"

"Will you come back here afterward?"

"No, I'll have to go see my father. You know, he's only about thirty versts from \*\*\*. I haven't seen him or my mother for a long time; one must console the old folks. They're good people, especially my father; he's so amusing. I'm all they have."

"Will you stay there long?"

"I don't think so. I'll probably get bored."

"Will you come to see us on your way back?"

"I don't know . . . we'll see. Well, so, how about it? Shall we go?"

"All right," Arkady replied lazily.

In his heart and soul he was delighted with his friend's proposal, but he considered it his obligation to conceal his emotions. It was not for nothing he was a nihilist! The next day he left with Bazarov for \*\*\*. The young people in Marino regretted their departure; Dunyasha even shed a few tears . . . but the old folks breathed a sigh of relief.

|   |                              |            |
|---|------------------------------|------------|
| <b>Questions</b>  |                              |            |
| a) Place the extract in context.                                      |                              | (08 marks) |
| b) Describe the character of:   |                              | (06 marks) |
| (i) Nikolai Petrovich   |                              |            |
| (ii) Pavel Petrovich  |                              |            |
|   | as portrayed in the extract. | (04 marks) |
| c) Describe Nikolai Petrovich's feelings as portrayed in the extract. |                              | (08 marks) |
| d) What is the significance of the extract to the rest of the novel?  |                              | (10 marks) |

## SECTION C

### **ALEX LA GUMA: *A Walk in the Night*.**

**Either:**

10. Discuss the character and role of Constable Raalt in the short story, *A Walk in the night*. (33 marks)

**Or:**

11. How does Alex La Guma present his message in *A Walk in the Night*? (33 marks)

### **ES'KIA MPHALELE: *In Corner B*.**

**Either:**

12. Discuss the author's use of irony in the short story, *In Corner B*? (33 marks)

**Or:**

13. How relevant is *In Corner B* to the Ugandan community? (33 marks)

### **CHINUA ACHEBE: *The Voter*.**

**Either:**

14. Examine the narrative techniques Achebe uses in the short story, *The Voter*. (33 marks)

**Or:**

15. Discuss the theme of betrayal in the short story, *The Voter*. (33 marks)

## SECTION D

### **JULIUS OKWINYO: *Footprints of the Outsider*.**

**Either .**

16. Discuss the different struggles Abdul Olwit goes through. How do these shape his character as the novel progresses? (33 marks)

**Or**

17. Describe the character and role of Father Guglielmo in the novel, *Footprints of the Outsider*. (33 marks)

### **H.R. OLE KULET: *Vanishing Herds*.**

**Either**

18. Discuss the importance of nature and the environment in the Maa society as shown in *Vanishing Herds*. (33 marks)

**Or**

19. How has H.R. Ole Kulet sustained the readers' interest in the novel, *Vanishing Herds*, (33 marks)

### **OSI OGBU: *The Moon Also Sets*.**

**Either**

20. Discuss the theme of tradition and culture as shown in the novel, *The Moon Also Sets*. (33 marks)

**Or**

21. Examine the relevance of the novel, *The Moon Also Sets* to your society. (33 marks)

**END**

**P510/2**  
**PHYSICS**  
**PAPER 2**  
**July/August**  
**2½ hours**



## **WAKISSHA JOINT MOCK EXAMINATIONS**

**Uganda Advanced Certificate of Education**

### **PHYSICS**

#### **Paper 2**

**2 hours 30 minutes**

#### **INSTRUCTIONS TO CANDIDATES:**

- Answer **five** questions, taking at least **one** from each of the sections **A**, **B**, **C** and **D** but **not** more than **one** question should be chosen from either section **A** or **B**.
- Any additional question(s) answered will **not** be marked.
- Non-programmable scientific calculators may be used.
- Mathematical tables and squared papers will be provided.

*Assume where necessary;*

|  |   |
|--|---|
| Acceleration due to gravity, g,            | = 9.81ms <sup>-2</sup>                    |
| Speed of sound in air                      | = 330ms <sup>-1</sup>                     |
| Speed of light in vacuum, c,               | = 3.0x10 <sup>8</sup> ms <sup>-1</sup>    |
| Electronic charge, e,                      | = 1.6x10 <sup>-19</sup> C                 |
| Electron mass                              | = 9.11x10 <sup>-31</sup> kg               |
| Planck's constant, h,                      | = 6.63x10 <sup>-34</sup> Js               |
| Permeability of free space, $\mu_0$ ,      | = 4.0πx10 <sup>-7</sup> Hm <sup>-1</sup>  |
| Permittivity of free space, $\epsilon_0$ , | = 8.85x10 <sup>-12</sup> Fm <sup>-1</sup> |
| The constant $\frac{1}{4\pi\epsilon_0}$    | = 9x10 <sup>9</sup> F <sup>-1</sup> m     |
| One electron volt, (eV)                    | = 1.6x10 <sup>-19</sup> J                 |
| Avogadro's number, $N_A$                   | = 6.02x10 <sup>23</sup> mol <sup>-1</sup> |
| Specific heat capacity of water            | = 4200Jkg <sup>-1</sup> K <sup>-1</sup>   |

## SECTION A

1. (a) (i) State the **laws of reflection** of light. (2 marks)
- (ii) A ray of light is incident on a plane mirror. The mirror is then turned through an angle  $\theta$  while keeping the direction of the incident ray fixed. Show that the reflected ray is turned through angle  $2\theta$ . (3 marks)
- (b) Define the following terms as applied to convex mirrors: (1 mark)
- (i) **principal focus.** (1 mark)
- (ii) **radius of curvature.**
- (c) An object is placed at a distance  $u$  from a convex mirror of focal length  $f$ . The mirror forms an image of the object at a distance  $v$  from its pole. Using a geometrical ray diagram, derive an expression of the mirror formula for the convex mirror. (5 marks)
- (d) The diagram in Fig. 1 below shows a small source of light S placed in between a large concave mirror C which is placed coaxially and in front of a small convex mirror B with their reflecting surfaces facing each other. A screen P, large enough to block light from S from falling directly on B but small enough to allow light from C to reach B, is placed at a distance of 10 cm in front of B.

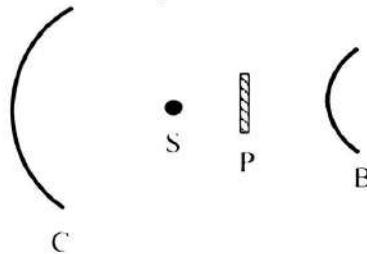


Fig. 1

If S is 20 cm from C and the radii of curvature of C and B respectively are 30 cm and 20 cm and the final image of S is formed on P on the side facing B, find the:

(i) distance between S and P. (5 marks)

(ii) magnification of the final image of S. (3 marks)

2. (a) What is meant by the following as applied to refraction?
- (i) **absolute refractive index.** (1 mark)
- (ii) **total internal refraction.** (1 mark)
- (b) Describe an experiment to determine the refractive index of a liquid using an air cell. (5 marks)
- (c) The figure 2 below shows two triangular glass prisms X and Y, each of refracting angle  $30^\circ$  and refractive index 1.51 and 1.65 respectively, cemented together to form a compound prism with a common interface along AB.

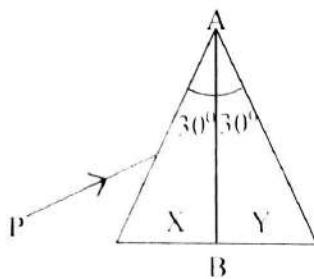


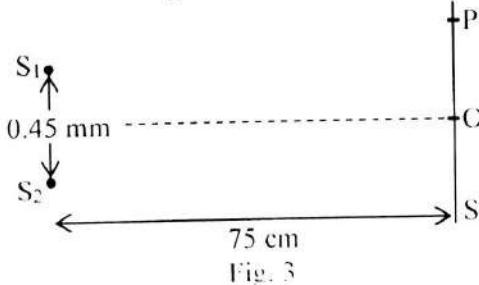
Fig. 2

If a ray of light from P, incident on one surface of X is refracted to pass normally across AB, calculate the angle of deviation of the light. (4 marks)

- (d) What is meant by the following as applied to a telescope? (1 mark)  
(i) magnifying power. (1 mark)  
(ii) eye-ring.
- (e) (i) With the aid of a diagram, derive an expression for the magnifying power of an astronomical telescope in normal adjustment. (5 marks)  
(ii) State any two disadvantages refracting telescopes have as opposed to the reflecting type. (2 marks)

### SECTION B

3. (a) (i) What is meant by **plane – polarised light?** (1 mark)  
(ii) Describe how plane – polarised light can be produced by double refraction. (4 marks)
- (b) A parallel beam of unpolarised light incident on a transparent glass of refractive index 1.50 is reflected as plane polarised light. Calculate the angle of refraction in glass. (3 marks)
- (c) State the **principle of superposition** of waves. (1 mark)
- (d) (i) Distinguish between **constructive** and **destructive** interference. (2 marks)  
(ii) State the conditions for interference of two waves to occur. (2 marks)  
(iii) Explain why an oil film on a water surface appears to be coloured. (3 marks)
- (e) Figure 3 below shows two slits  $S_1$  and  $S_2$  and a screen S in Young's double – slit experiment. Light of wavelength  $5.12 \times 10^{-7}$  m is used.



If P is the position of the third bright fringe from the central fringe O, calculate the distance OP. (4 marks)

4. (a) Distinguish between **progressive** and **stationary** waves. (3 marks)
- (b) (i) What is meant by **resonance** as applied to sound? (1 mark)  
(ii) Describe the resonance tube method experiment to determine the speed of sound in air using tuning forks of different frequencies. (5 marks)

- (c) A uniform glass tube 80 cm long is fully filled with water. When a tuning fork of frequency 60 Hz is sounded and placed above the tube as the water level is lowered, resonance is first obtained when the length of the water in the tube is 67 cm. If the third resonance is obtained when the liquid column is 10.2 cm, calculate the velocity of sound produced by the tuning fork. (4 marks)

**Turn Over**

- (d) (i) Explain briefly how beats are formed. (2 marks)  
(ii) Derive an expression for the beat frequency. (3 marks)
- (e) State **two** applications of beats. (2 marks)

## SECTION C

5. (a) Define the **unit of magnetic flux density**. (1 mark)
- (b) (i) Write down an expression for the magnetic flux density at the centre of a flat circular coil, defining the symbols used. (2 marks)  
(ii) Draw a sketch diagram to show the directions of the magnetic field, current and torque due to the current flowing in a flat circular coil. (2 marks)
- (iii) A wire of length 9.81 m is wound into a flat circular coil of diameter 3.5 cm. If a current of 1.5 A passes through the coil, find the magnetic flux density at the centre of the coil. (3 marks)
- (c) (i) Describe the structure and mode of operation of the moving coil galvanometer. (6 marks)  
(ii) State any **two** limitations to increasing current sensitivity of a moving coil galvanometer. (2 marks)
- (d) Explain with the aid of a diagram why a conductor carrying current experiences a mechanical force when placed in a magnetic field. (4 marks)
6. (a) (i) State the **laws of electromagnetic induction**. (2 marks)  
(ii) Describe an experiment to verify Lenz's law. (6 marks)
- (b) Define the following terms as applied to the earth's magnetic field:  
(i) **angle of dip**. (1 mark)  
(ii) **magnetic meridian**. (1 mark)
- (c) A circular coil of 120 turns and mean diameter 80cm is placed in such a way that its plane is at right angles to the magnetic meridian. The coil is connected to a ballistic galvanometer of sensitivity  $6.0 \times 10^4$  rad C<sup>-1</sup>. The total resistance of the coil and galvanometer is 220Ω. When the coil is rotated through 180° about a vertical axis, the ballistic galvanometer deflects through 1.0 radians. Calculate the horizontal component of the earth's magnetic flux density. (4 marks)
- (d) (i) Explain the term **back e.m.f.** as applied to a motor, and derive its relation to the efficiency of the motor. (4 marks)  
(ii) State the significance of back e.m.f. in the d.c. motor. (2 marks)
7. (a) Define the following terms as applied to alternating current:  
(i) **root – mean – value**. (1 mark)  
(ii) **peak value**. (1 mark)
- (b) (i) A source of sinusoidal voltage of amplitude V<sub>0</sub> and frequency f is connected across a capacitor of capacitance C. Derive an expression for the instantaneous current which flows. (3 marks)  
(ii) With reference to the circuit in (b) (i) above, sketch using the same axes, graphs to show variation of voltage V and current I with time. (2 marks)

- (iii) A capacitor of capacitance  $1.0 \mu\text{F}$  is used in a radio circuit where the frequency is  $1.1 \text{ kHz}$  and the current flowing is  $5 \text{ mA}$ . Calculate the voltage across the capacitor. (3 marks)
- (c) The figure 4 below shows a charged capacitor C, an inductor L, and a switch K, all connected in series.

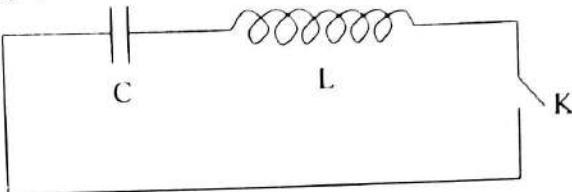


Fig. 4

Explain what happens when switch K is closed.

(5 marks)

- (d) (i) Explain the advantage of alternating current over direct current in power transmission. (2 marks)
- (ii) Explain briefly how energy losses in an a.c. transformer can be minimised. (3 marks)

#### SECTION D

8. (a) (i) What is meant by e.m.f. of a cell? (1 mark)
- (ii) Derive the expression for the electrical energy dissipated in a resistor of resistance R ohms, carrying current I amperes for t seconds. (3 marks)
- (b) The figure 5 below shows a network of five resistors, each of resistance  $5 \Omega$  connected to a battery of e.m.f.  $25 \text{ V}$  and internal resistance  $0.2 \Omega$ .

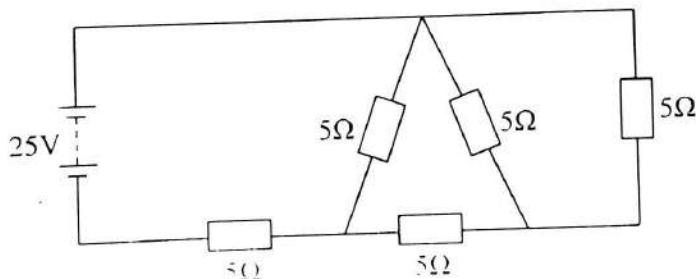


Fig. 5

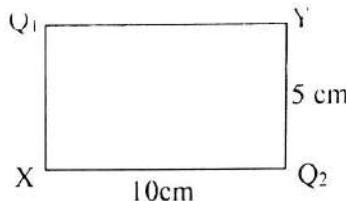
Calculate the power dissipated in the battery. (5 marks)

- (c) (i) Define **temperature coefficient of resistance** and state its S.I unit. (2 marks)
- (ii) Explain why semiconductors have negative temperature coefficient of resistance. (2 marks)
- (d) (i) Describe an experiment to determine temperature coefficient of resistance of a metal wire using a metre bridge. (5 marks)
- (ii) State any **two** precautions that must be taken when carrying out the experiment in (d) (i) above. (2 marks)

**Turn Over**

9. (a) (i) Define the terms **electric field intensity** and **electric potential** at point. (2 marks)
- (ii) Sketch graphs showing variation of electric potential and electric field intensity with distance from the centre of a charged conducting sphere. (2 marks)

- (b) The figure 6 below shows two charges  $Q_1$  and  $Q_2$  of  $+4.0 \mu\text{C}$  and  $-10 \mu\text{C}$  respectively placed at two opposite corners of a rectangle of sides 10 cm and 5 cm.



Calculate the:

Fig. 6

- (i) electric potential at X. (4 marks)
- (ii) electric field intensity at X. (4 marks)
- (c) With the aid of a labelled diagram, describe the structure and mode of action of the Van de Graaf generator. (6 marks)
- (d) Explain why the electric field intensity close to the surface of a charged conductor is always at right angles to the surface of the conductor. (2 marks)

10. (a) Define the **farad**. 1 mark
- (b) (i) Describe briefly the energy transformations that take place when charging a capacitor. (2 marks)
- (ii) Explain why the capacitance of a charged capacitor changes when a dielectric is placed between its plates. (4 marks)
- (c) Two capacitors of capacitances  $C_1$  and  $C_2$  respectively are connected in series with a cell of e.m.f.  $V$ . Show that the p.d.  $V_1$  across the capacitance of capacitance  $C_1$  is given by the expression:  

$$V_1 = \frac{C_1}{C_1 + C_2} V$$
 (4 marks)
- (d) Two capacitors of capacitance  $4 \mu\text{F}$  and  $2 \mu\text{F}$  respectively are joined in series with a battery of e.m.f. 120 V. The connections are then broken and the like terminals of the capacitors are joined together. Find the final charge of each capacitor. (5 marks)
- (e) Describe how the unknown capacitance of a capacitor can be determined by using a ballistic galvanometer. (4 marks)

**END**

**P230/2**  
**ENTREPRENEURSHIP**  
**EDUCATION**  
**Paper 2**  
**July/August**  
**3 hours**



**WAKISSHA JOINT MOCK EXAMINATIONS**

**Uganda Advanced Certificate of Education**

**ENTREPRENEURSHIP EDUCATION**

**Paper 2**

**3 hours**

**INSTRUCTIONS TO CANDIDATES:**

- *Answer four questions only.*
- *All questions carry equal marks.*
- *Credit will be given for the use of relevant diagrams and illustrations.*
- *Any additional question(s) answered will not be marked.*

1. You have obtained funds to start a dairy farm in your locality. (7 marks)
- Design an appraisal form for use during employee evaluation. (7 marks)
  - Present guidelines observed in your business to retain workers. (6 marks)
  - Clearly illustrate the communication process flow followed in your enterprise. (6 marks)
- d) Write a MEMO to the line managers inviting them for an urgent meeting about customers complaint on the quality of the dairy products. (5 marks)
2. You are involved in a business that deals in the production and supply of fresh fruit juice in your locality.
- Cleary write down a program followed to develop an effective sales promotion for the business products. (7 marks)
  - Present the measures followed by the business to attract customers. (5 marks)
  - Write down a product advert to promote sales for your business. (6 marks)
  - Prepare a payroll that was followed to make payments to your employees last month. (7 marks)

3. The trial Balance below relates to NGATO sellers for the year 2020.

| Details               | Dr (Shs)   | Cr (Shs)   |
|-----------------------|------------|------------|
| Sales                 |            | 11,000,000 |
| Purchases             | 6,000,000  |            |
| Capital               |            | 21,650,000 |
| Buildings             | 9,000,000  |            |
| Bank balance          | 8,000,000  |            |
| Furniture             | 1,200,000  |            |
| Return in wards       | 100,000    |            |
| Accounts payables     |            | 1,800,000  |
| Carriage on sales     | 200,000    |            |
| Carriage on purchases | 100,000    |            |
| Salaries and wages    | 800,000    |            |
| Electricity           | 230,000    |            |
| Water bills           | 50,000     |            |
| Final expenses        | 150,000    |            |
| Motor vehicle         | 1,000,000  |            |
| Accounts Receivable   | 600,000    |            |
| Cash in hand          | 350,000    |            |
| Drawings              | 200,000    |            |
| Opening stock         | 370,000    |            |
| Land                  | 7,100,000  |            |
| Total                 | 35,450,000 | 35,450,000 |

#### Additional Information

- Closing stock Shs. 700,000
- Unpaid water bills Shs. 10,000
- Accrued salaries and wages Shs. 120,000
- Prepaid electricity Shs. 6000
- Depreciate motor vehicle and furniture at a rate of 5% and per annum respectively.

- (a) Calculate; (2 marks)
- (i) Net purchases. (2 marks)
  - (ii) Cost of sales. (2 marks)
  - (iii) Gross profit. (4 marks)
  - (iv) Net profit ratio. (3 marks)
  - (v) Non-current assets turnover.
- (b) Compute and interpret the ratios below (4 marks)
- (i) Salaries to turnover ratio. (4 marks)
  - (ii) Average payment period to creditors. (4 marks)
  - (iii) Stock turnover period.
4. You are a general manager of Bee keeping business in your home area. (5 marks)
- (a) What benefits do you enjoy when you sell honey on credit? (6 marks)
  - (b) Prepare a program followed in your business to recover credit. (8 marks)
  - (c) Present a SWOT analysis for the business.
  - (d) Write down guidelines followed to properly manage inventory in your business. (6 marks)
5. Your metal fabrication plant has been facing reduction in sales mainly due to reduction in the quantity of your products. (7 marks)
- (a) Formulate guidelines put in place to ensure maximization of profits in your business.
  - (b) Develop an organizational plan for your business. (7 marks)
  - (c) Present a marketing budget followed to further boost sales in your Business. (6 marks)
  - (d) Design a delivery note for use in your business. (5 marks)
6. (a) Julius's income for the year 2019 was as shown below;
- Business income      Shs 4,000,000.  
 Property income      Shs 3,500,000.  
 Employment income    Shs 1,500,000.
- In the course of the year he used 10% of his business income to repaint his building and 15% of his property income was used to cater for salaries and wages.  
 The income that was tax exempt was Shs. 2,820,000
- Compute; (2 marks)
- (i) Gross income. (2 marks)
  - (ii) Julius' chargeable income.
- Given the tax rate below;
- | Income                  | Tax rate  |
|-------------------------|---|
| Exceeding shs 4,920,000 | <ul style="list-style-type: none"> <li>a) Shs 300,000 + 30 % of income by which chargeable income exceeds Shs. 4,920,000.</li> <li>b) Where chargeable income exceeds Shs. 120,000.000, an additional 10% is charged on income exceeding Shs 120,000.000</li> </ul> |
- (iii) Compute his tax payable that year. (3 marks)

**Turn Over**

- (b) Abbas collected rental income on a monthly basis as shown below in 2020.

Muyenga houses Shs. 1,000,000.

Mukono building Shs. 1,500,000.

Mukono mall Shs. 3,000,000.

He met 75% of his Gross rent as operational expenses.

Given a rental tax rate of 30%.

Compute his;

(i) Gross rental income. (2 marks)

(ii) Rental income tax paid. (3 marks)

- (c) Below are the purchases and sales made by Suubi enterprises during the month of December 2020. The prices were inclusive of VAT at the standard rate of 18%.

December, 1<sup>st</sup> 2020 purchased 400 units at Shs. 5,600 per unit.

10<sup>th</sup> sold 200 units at Shs. 7,200 per unit

20<sup>th</sup> purchased 300 units at Shs. 6,400 per unit

31<sup>st</sup> sold goods 200 units at Shs. 8,000 per unit.

Compute;

(i) Total VAT payable on purchases that month. (6 marks)

(ii) Total VAT payable on sales that month. (6 marks)

(iii) What are limitations of Value Added Tax (VAT)? (1 mark)

**END**

**P525/2**  
**CHEMISTRY**  
**Paper 2**  
**July/August**  
**2½ hours**



**WAKISSHA JOINT MOCK EXAMINATIONS**

**Uganda Advanced Certificate of Education**

**CHEMISTRY**

**(Principal Subject)**

**Paper 2**

**2 hours 30 minutes**

**INSTRUCTIONS TO CANDIDATES;**

- Answer **five** questions including **three** questions from section A and any **two** questions from section B.
- Write the answers in the answer booklet/sheets provided.
- **Begin each question on a fresh page.**
- Mathematical tables and graph papers are provided.
- Non programmable, silent scientific electronic calculators may be used.
- Illustrate your answers with equations where applicable.
- Where necessary use ( $C = 12$ ,  $O = 16$ ,  $H = 1$ ,  $N = 14$ ,  $Br = 80$ ,  $IF = 96500C$ )

**Turn Over**

## SECTION A

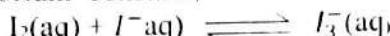
*Attempt only three questions from this section.*

1. An organic compound **P**,  $C_6H_{12}O$  has the following properties.
    - It forms a yellow precipitate with both Brady's reagent and iodine solution in presence of sodium hydroxide solution.
    - It burns with yellow non sooty flame.
    - It forms a cloudy solution immediately when treated with concentrated hydrochloric acid in presence of anhydrous zinc chloride.
 (a) Write structural formula and IUPAC name of **P**. (02 marks)
  - (b) Write equation and suggest a mechanism for the reaction between **P** and
    - (i) concentrated hydrochloric acid in presence of anhydrous zinc chloride. (3½ marks)
    - (ii) Hot concentrated orthophosphoric acid at  $160^{\circ}\text{C}$ . (4½ marks)
    - (iii) Potassium cyanide in the presence of dilute sulphuric acid at the temperature less than  $20^{\circ}\text{C}$ . (03 marks)
    - (iv) Brady's reagent. (05 marks)
  - (c) Using equations only, show how **P** can be synthesized from propan-2-ol. (02 marks)
2. (a) Distinguish between order of reaction and activation energy. (02 marks)
  - (b) The table below shows the concentration of iodine varying with time during the acid catalysed iodination of propanone.
 
$$\text{CH}_3\text{COCH}_3 + \text{I}_{2\text{aq}} \xrightarrow{\text{H}^+} \text{CH}_3\text{COCH}_2\text{I}_{\text{aq}} + \text{HI}_{\text{aq}}$$

| Time (min)                              | 0     | 2     | 4     | 6     | 8     | 10    | 12    |
|---|-------|-------|-------|-------|-------|-------|-------|
| $[\text{I}_2]$ ( $\text{mol dm}^{-3}$ ) | 0.210 | 0.190 | 0.166 | 0.150 | 0.134 | 0.110 | 0.090 |

 Plot a graph of iodine against time and use it to determine: (3½ marks)
    - (i) units. (1½ marks)
    - (ii) the order of reaction. (02 marks)
  - (c) Describe an experiment to show how the results in (b) can be determined. (06 marks)
  - (d) Ethanal decomposes thermally to form methane and carbon monoxide according to the following equation.
 
$$\text{CH}_3\text{CHO}_{\text{(g)}} \longrightarrow \text{CH}_{4\text{(g)}} + \text{CO}_{\text{(g)}}$$
 Standard enthalpy of formation are  $\Delta H_f^\theta(\text{CH}_3\text{CHO}) = -166\text{ kJ mol}^{-1}$ ,  $\Delta H_f^\theta(\text{CH}_{4\text{(g)}}) = -75\text{ kJ mol}^{-1}$  and  $\Delta H_f^\theta(\text{CO}_{\text{(g)}}) = -110\text{ KJ mol}^{-1}$ .  
 The activation energy,  $E_a = +190\text{ kJ mol}^{-1}$   
 Draw the reaction profile for the reaction indicating the values of  $E_a$  and  $\Delta H_{\text{Reaction}}^\theta$ . (05 marks)
3. (a) Define the following terms:
    - (i) Partition coefficient. (01 mark)
    - (ii) Solvent extraction. (01 mark)
  - (b) Describe an experiment that can be used to determine the distribution coefficient of butane-1,4-dioic (succinic) acid between trichloromethane and water. (06 mark)
  - (c) 50 cm<sup>3</sup> of iodine solution in 0.16M potassium iodide was shaken with 50cm<sup>3</sup> of trichloromethane in a separating funnel until equilibrium was attained at room temperature. The mixture was allowed to stand for the layers to separate. 20cm<sup>3</sup> of the aqueous layer required 21.30 cm<sup>3</sup> of 0.15M sodium thiosulphate solution using starch indicator. 20cm<sup>3</sup> of the trichloromethane layer required 26.70cm<sup>3</sup> of 0.15M sodium thiosulphate solution using starch indicator. (KD of iodine between trichloromethane and water is 85 at room temperature) Calculate;
    - (i) the molar concentration of free iodine in trichloromethane layer. (03 marks)

- (ii) the molar concentration of free iodine aqueous layer. (02 marks)  
 (iii) the molar concentration of complexed (fixed) iodine in aqueous layer. (2½ marks)  
 (iv) the equilibrium constant,  $K_c$  for the reaction:



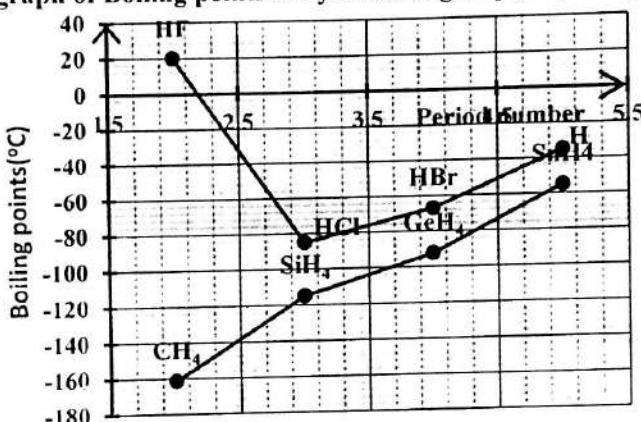
(2½ marks)

- (d) State:

- (i) one application of partition coefficient. (01 mark)  
 (ii) one reason why starch is used as an indicator in titration involving sodium thiosulphate. (01 mark)

4. The boiling points of hydrides of group (IV) and group(VII) are shown in the graph below.

**A graph of Boiling points of hydrides of group (IV) and group (VII) elements**



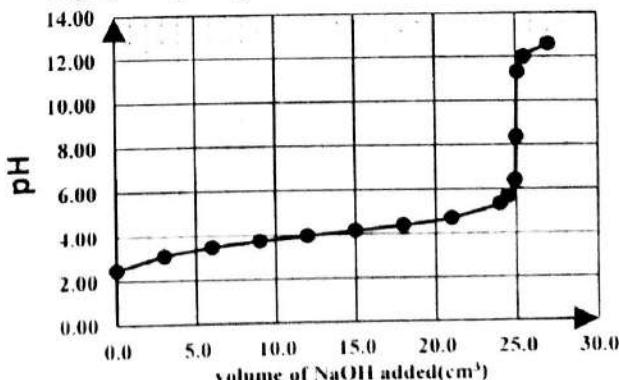
- (a) Explain why;
- (i) the graph for the hydrides of group(IV) is almost linear. (2½ marks)
  - (ii) the boiling point of the hydride of fluorine is abnormally high compared to that of the hydride of carbon. (3½ marks)
  - (iii) the boiling points of other hydrides of group seven elements increase with increase in period number. (2½ marks)
- (b) Describe the reactions of;
- (i) the hydrides of group(VII) elements with concentrated sulphuric acid.(3½ marks)
  - (ii) the hydrides of group(IV) elements with sodium hydroxide. (04 marks)
- (c) Write equation for the reaction between;
- (i) Hydrogen fluoride with silicon (IV) oxide. (1½marks)
  - (ii) Methane with hot copper(II) oxide. (1½marks)
  - (iii) Hydrogen Chloride gas with aqueous potassium manganate (VII) solution. (1½marks)

## SECTION B

*Attempt only two questions from this section.*

5. The graph below shows the pH changes that occur when 25cm<sup>3</sup> of 0.1M weak acid HA was titrated against sodium hydroxide solution.

**A graph of pH against volume of NaOH added**



- (a) Use the graph to determine:  
 (i) the  $K_a$  of the weak acid(HA).  
 (ii) the pH and volume at the end point. (03 marks)  
 (02 marks)
- (b) Calculate the:  
 (i) molarity of sodium hydroxide solution.  
 (ii) the hydrolysis constant of the salt formed at the end point. (03 marks)  
 (04 marks)
- (c) Explain the shape of the graph. (06 marks)
- (d) Which of the indicators methyl orange and phenolphthalein would be suitable for this titration. Give the reason for your answer. (02 marks)
6. Without using equations, describe how the following conversions can be effected. (04 marks)
- (a) Phenyl methanol from benzene. (3½ marks)
- (b) Benzene from calcium oxide. (05 marks)
- (c) Phenol from nitrobenzene. (4½ marks)
- (d) 2-hydroxypropanoic acid from ethanol. (03 marks)
- (e) phenyl ethyne from phenyl ethane. (03 marks)
7. Explain each of the following observations:  
 (a) An aqueous solution of sodium sulphate is neutral to litmus while aqueous solution of sodium sulphite turns red litmus paper blue. (04 marks)
- (b) When excess carbon dioxide gas was separately bubbled through sodium aluminate solution and sodium carbonate solution both form white precipitate. (04 marks)
- (c) When warm concentrated nitric acid was added to sulphur, the yellow solid dissolved with effervescence of reddish brown gas and colorless solution was formed. (03 marks)
- (d) The shapes of the molecules  $BF_3$  and  $PCl_3$  are different. (05 marks)
- (e) The melting point of sodium is  $98^{\circ}C$  where as that of magnesium is  $650^{\circ}C$ . (04 marks)
8. One of the ores of copper is copper pyrites ( $CuFeS_2$ ). (01 mark)
- (a) (i) What is meant by the term **ore**?  
 (ii) Name and write the formulae of **two** other ores of copper. (02 marks)
- (b) Copper pyrites can be concentrated by froth flotation. Describe briefly how the process is carried out. (02 marks)
- (c) The concentrated ore in (b) above is roasted in a limited supply of air. The roasted product is mixed with silicon (IV) oxide and the mixture heated in the absence of air. Explain why;  
 (i) the concentrated ore is roasted in limited supply of air. (2½ marks)  
 (ii) the roasted product is heated with silicon(IV) oxide in the absence of air. (02 marks)
- (d) Describe briefly how the;  
 (i) impure copper can be obtained from roasted product. (03 marks)  
 (ii) impurities in the copper can be removed. (03 marks)
- (e) State what would be observed and write equation for the reaction that took place when pure copper is added to;  
 (i) moderately concentrated nitric acid (02 marks)  
 (ii) silver nitrate solution. (1½ marks)

**END**

P230/3

**ENTREPRENEURSHIP  
EDUCATION**

**Paper 3**

**July/August**

**3 hours**



**WAKISSHA JOINT MOCK EXAMINATIONS**

**Uganda Advanced Certificate of Education**

**ENTREPRENEURSHIP EDUCATION**

**Paper 3**

**3 hours**

**INSTRUCTIONS TO CANDIDATES:**

- *This paper consists of three sections A, B and C.*
- *Answer four questions only.*
- *Section A is compulsory. Answer any three questions from sections B and C, choosing at least one question from each section.*
- *All questions carry equal marks.*
- *Any additional question(s) answered will not be marked.*
- *Credit will be given for use of relevant diagrams and illustrations.*

## **SECTION A**

### **Case Study**

#### **1. Read the case study of Mr. Opio and answer the questions that follow**

Mr Opio Tom operates a restaurant in Kalwera Market. There are many other food Kiosks in the market and the competition is stiff. Mr. Opio has specialized in serving non-fried traditional dishes. This means he uses high quality and valve foods to prepare his dishes which must be in their original high-quality form. He also sells traditional drinks, milk and porridge and on weekends, one has a chance of getting a free drink.

While Mr. Opio strategically stands outside his kiosk to welcome customers, the wife gives them seats, takes their orders and ensures that the waiters and waitresses serve them promptly. After their meals, Mr. Opio's wife collects payment. She ensures proper counting of the money and also timely refund of the balance. At the end of each day, she banks the money at a nearby Saving and credit society.

Mr. Opio and the wife have been able to fulfil some of their dreams like having a personal motor vehicle, built a house, have access to good medical facilities, bought land, have access to utilities like clean water, have access to food and have also taken their children to good performing schools.

Mr. Opio has incurred heavy costs on purchase of land, insuring his business, paying salaries and wages, advertising his business, purchase of a computer, transport costs, purchase of furniture for the business, payment of water and electricity bills. These have adversely affected the restaurant's funds.

Basing on the above costs, Mr. Opio has decided to approach Equity Bank-Wandegaya branch for a loan facility of Shs. 10,000,000. He has been given the following terms and conditions:

- i) The loan amount shall be paid back within a period of five years.
- ii) The loan interest shall be 5% annually but shall be based on outstanding balance.

Mr. Opio hopes that once he acquires this loan, it will be a great boast to his business' success.

#### **Questions**

- a) What selling tactics and strategies does Mr. Opio use in his business? (5 marks)
- b) Mention the financial management activities that are being exercised in Mr. Opio's restaurant. (3 marks)
- c) List examples of physiological needs that Mr. Opio has been able to fulfil in his life. (4 Marks)
- d) Mention the working capital requirements Mr Opio incurred in the restaurant. (3 marks)
- e) Prepare a loan repayment schedule for a loan facility in the case study above. (6 Marks)
- f) Advise Mr. Opio on the importance of running his restaurant hand in hand with his wife. (4 marks)

## **SECTION B**

## SCHOOL BUSINESS CLUB

**Answer at least one question from this section.**

2. With reference to the business project carried out by your school business club.
- a) Describe the nature of the business carried out. (5 marks)
  - b) Explain the different ways you used to identify potential suppliers. (4 marks)
  - c) What factors did you consider while determining the distribution Channel of your product(s)? (5 marks)
  - d) i) Which financial statement was used to find out the financial stand of the project? (1 mark)  
ii) Mention the items that were included in the above financial statement. (6 marks)
  - e) How did you elect the club executive committee? (4 marks)
3. In relation to the school business project carried out by your entrepreneurship club:
- a) i) State the type of business. (1 mark)  
ii) Give the brand name of the project and the product(s). (2 marks)
  - b) How did you benefit from proper time management? (6 marks)
  - c) Describe the techniques you used to cope up with change. (6 marks)
  - d) i) Describe the leadership structure of the project. (5 marks)  
ii) Give reasons why you prepared the leadership structure. (5 marks)

## SECTION C

### FIELD ATTACHMENT / FIELD TRIP

**Answer at least one question from this section**

4. For any field attachment in which you were involved:
- a) i) Describe the business. (3 marks)  
ii) What factors were considered when designing the plant layout of that business? (4 marks)
  - b) Show the techniques the business uses to present its products to the customers. (4 marks)
  - c) Discuss the relationship between the business and the society. (8 marks)
  - d) What techniques did the business use when establishing whether the customers are satisfied? (3 marks)
  - e) Advice the owner(s) of the business on the different ways of handling credit sales. (3 marks)
5. For any business you were attached to:
- a) Describe the size of that business. (5 marks)
  - b) What competitive advantages did the business possess? (6 marks)
  - c) Mention the different methods of sourcing employees the business uses. (5 marks)
  - d) How did the business ensure proper lighting within its premises? (5 marks)
  - e) Advice the owner about the merits of online marketing. (4 marks)

**END**

**P360/3**  
**LUGANDA**  
**PAPER 3**  
**July/August**  
**3 hours**



## **WAKISSHA JOINT MOCK EXAMINATIONS**

**Uganda Advanced Certificate of Education**

**LUGANDA**  
**LITULICA MU LUGANDA**  
**Olupapula olwokusatu**

**Essaawa ssatu (3)**

### **EBIGOBERERWA:**

- *Olupapula luno lugabanyiziddwamu ebitundu bisatu A, B, ne C*
- *Ddamu ebibuuzo bina (4) byonna awamu.*
- *Mu kitundu A kolamu ekibuuzo **kimu (1)***
- *Mu kitundu B kolamu ebibuuzo **bibiri (2)** ekimu kya Puloozi n'ekirala kimu okuva niu bitontome.*
- *Mu kitundu C, kolamu ekibuuzo **kimu (1).***

## **EKITUNDU A**

### **ENGERO ENJIYE**

**Kola ekibuuzo kimu kyokka mu kitundu kino.**

#### **SSEMWANGA KIVUMBI BANTUBALAMU: Gw'olulambuza**

**1. Soma akatundu kano n'oluvannyuma oddemu ebibuuzo ku nkomerero yaako.**

Olkukola obuteebalira, ebintu byayongera okututambulira obulungi ennyo, ate ku byc tulina bwetwayongerako okukungula pamba nga tuyambibwako abasajja baffe okwali Fudyeri Fondyongo, Lumoko, Kalimanzer, Maliyataabu, Kaziikire, Byalaase, Mbanza, Kaladebanye ne Kineebeneebe awo ne kisukka. Anti bwebaamalanga okukungula pamba ate olwo ne bakkira okumusunsulamu mu saafi ne faagi. Era olw'obukozi bwabwe mu kiseera kya makungula ng'eyo mu nnimiro gye tusiiba oluusi nga nekyemisana gye tukiriira.

**Ebibuuzo:**

- (i) Emboozi eyo esimbuddwa mu ssuula ki mu lugero *Gw'olulambuza*? (obubonero 2)
- (ii) Bintu ki ebyakolerwanga abakozi aboogeddwako mu katundu okubongera embavu mu kukola? (obubonero 4)
- (iii) Nannyini bakozzi/alabirira abakozi bano aboogerwako mu mboozzi azimbiddwa atya? (obubonero 9)
- (iv) Omuwandiisi yagenderera ki okututeera essuula eyo omusimbuddwa emboozi eyo mu lugero? (obubonero 10)

**2. Buli asoma *Gw'olulambuza* asigala atendereza omuwandiisi waalwo olw'obunyuvu obululimu. Kino Ssemwanga Kivumbi akikola atya?** (obubonero 25)

#### **NKASA MUSA MUTYABA: Agamyuka omutezi**

**3. "Enkeera nabbalabaalako ku kyalu nga nambula ku bamanyi n'okwejjukanya ku by'edda. Ekyasinga okuneewunyisa ze nkyukakyuka ze nasanga ku Namaliiri"**

- (i) Ani ayogera ebigambo ebyo era bisimbuddwa mu ssuula ki mu lugero? (obubonero 3)
- (ii) Nnyonyola enkyukakyuka omwogezi gye yasanga ku kyalu Namaliiri. (obubonero 4)
- (iii) Omwogezi w'ebigambo ebyo azimbiddwa atya? (obubonero 8)
- (iv) Bubaka ki omuwandiisi bwe yayagala abasomi be bafune mu essuula omugyiddwa emboozi eno? (obubonero 10)

**4. Omuwandiisi w'olugero *Agamyuka omutezi* ayolesa atya obwenkanya mu bantu be baatutondera mu lugero lwe?** (obubonero 25)

## EKITUNDU B

### PULOOZI

#### **Kola ekibuuozo nnamba 5 n'ekirala kimu okuva mu bitontome.**

5. Soma ekitundu kino oluvannyuma oddemu ebibuuozo ebikikwatako.

#### **MUKWASI YAGWA KU KYOKYA**

Olwawulira obukule, obuluulu n'enswagiro, ne nkimanya nti ebintu byali birungi si birungi ng'omwana asaananye muliraanwa. Nnatandikirawo okufaaafaagana ng'entungo eyiika, ne neetala mu kasiisira n'okukirako akataayi ku nswa. MBA nkyasattira ng'omukunku eyeekoonye, Wameera, omuvubuka eyali akuleembedde ekiwendda kino, n'alya mu ttama nga bwagamba nti. "Mukwasi, bw'oba omugezi ssulumayo mangu mu kasiisira! Keweemotya n'ogaaniramu. Ennyumba yo tugenda kugisereekulula tukukunuleyo ng'enseenene."

Bwe nnawulira ebigambo bya Wameera ng'awanda muliro, ne mmanyia nti singa sseesiba nkerekejje agasajja gaali gayinza okunkutula akaligirigi. Siwena oluggi ne ndukomeka ne nsomba emmeeza n'entebe ne nzibawo buli kituli. Nnali nkyabiyita bya kubalaata, ijnjenda okuwulira ng'ensambaggere n'emigombante biyiikira oluggi ng'enkuba.

Olwo ne mbyangatana ng'afumbirwa ayitiridde. Nnayagala nsubutuke mu luggi olw'emmanju nga ndowooza nti waakiri ne bwe bantwala nga ey'okuviivi tekyasaka, kaliggweeramu eyo. Naye mba nkyamagaladde, ijnjenda okulaba ng'akasolya k'enju agasajja gatandise okukakutula gatere gangwe ku mutwe. Bwe nnalaba nga bye nsiba bikutuka, nasalawo okweyiwa Amanda mu mbugo. Nneesiba ekitambaala ku mutwe era ne nfuluma enju mu mirembe ng'endigá eyeetwala eri omubaazi. Olwo agasajja agaali mu luggy ne gakuba oluyoogaano nti, "umusinde waaweere!" (Omulenzi awedde).

Abaali balinnye ku kasolya n'abaali banteegedde ebbali mu lusuku, tebaalwa ne bakukunukayo nga bona baswakidde ne bannyambalamu essaati. Amangu ddala, abantu abaali bateevuunya ng'obuwuka, banzikakanako ekiyifuyiifu ne banzirusa kifuba ddembe nga bwe baakoloobya ennyimba z'embalu. Mu bavubuka be baali bagombyemu obwaala, mwe mwali n'evvubuka eriyitiba Odaada.

Lino lyo lyali likuliridde nnyo ng'era buli olukya balyewerera okuliyisaako ekyambe ky'embalu. Lyali liwanvu ng'olusolobyo ng'ate lya kiwago. Naye ekyasinga okwewuunyisa nga abantu; Ky'ekigere kyalyo ekyali kyabyabyatala ne kigaziwa n'okukirako ekitiiyo. Kale buli lwe lyaddukiranga mu musenyu oba ensuusu nga ligenda lisenda bisende ng'ekitiyo bwe kiyoola n'okutikka omusenyu ku mmotoka. Ku luno nnalyo teryalutonda-era bakira nge lye basinga okuzinisa n'okuyimbisa ennyimba z'embalu. Nze omumwa nnali ngutunzeeko mpiso ng'era nkola gwa kudduka gwokka.

Agasajja gaatuddusa okwetooloola ekyalo Salye kyonna. Gaagiranga ne gakuba Odaada amatabi g'emiti mu mugongo n'ebisubi ebisiwi nga kibugga, ng'eno bwe gamusuuyira enkanja z'amalwa mu maaso n'okumusiiga obusa

bw'ente. Nze mu mutima nali nsaba lugaba annyambe amponye agasajja agaali geeyongedde ndi kwebuuza ekintu kimu lwaki nze gaali tegali kundiisa kakanya nga bwe gwali ku odaada?

Kazi essaawa yange yali tennnatuuwa, olwali okutuuka okumpi n'ewa ssenga kasifa, essajja limu eriyitibwa Walimba ne limmegga sseddume w'ekigwo. Okutemya n'okuzibula nga Ssekalootera anywagedde eddiimwa. Awo agasajja gonna ne ganzikakkanako ng'agawendule ne gansakata kibooko ezisiwa nga kwe gatadde ensambaggere, agakonde n'okumpujja embajjo z'emp.

Ebyo nnandibigumidde naye olwalaba ng'erimu ku gasajja agaali gankuba teryali ligisu, ng'era terimanyi na ngeri akaso gyekalumamu, ne neesala akajegere nange ne ntambuza ejjuumi, nnawuumiza esajja ekikonde ku luba ne lisujja n'omusaayi. Kuno kwalinga kukasuka jjinja mu njuki. Olwo agasajja gano gonna n'obwana obwali ku mugano, bangiikira kirindi ne banvulungula mu bitaba bya mukoka.

Tebaalwa ne baleeta n'ebidomola by'amazzi nebaganfukumulako gonna nga bwe bannyigira mu bitoomi n'okunsamba ng'omupiira wakati mu kkubo. Essajja eddala lyansamba mu lubuto n'oluvannyuma ne lisumulula empale yaalyo ne lifuyuisa omusulo ku mutwe gwange. Eddala lyo ly'aleetera ddala omusulo mu bbaafu ne ligunjiira gwonna mu maaso kata nzirike.

#### **Ebibuuzo:**

- (i) Emboozi eno yeesigamye ku miramwa ki? (Obuboero 4)
- (ii) Omunyumya w'emboozi eno azimbiddwa atya? (Obuboero 5)
- (iii) Laga engeri omuwandiisi gye yeeyambisizzaamu olulimi oluggyayo obubaka mu mboozi eno. Leeta ennimi mukaaga(6). (Obuboero 12)
- (iv) Leeta embeera satu(3) omunyumya w'emboozi eno ze yalimu ngawandiika emboozi eno. (Obuboero 4)

## **EBITONTOME**

### **Ddamu ekibuuzo kimu kyokka ng'okiggya mu nnamba 6, 7, 8 oba 9**

#### **KIZZA MUKASA: Omulyammere Kkoyi**

6. Soma ékitontome kino n'oluvannyuma oddemu ebibuuzo ku nkomerero yaaky.

#### **EBIKOMERA**

Ebikomera tebireetedde bantu mirembe nneeyano!  
Bikomera biviiriddeko abantu emiroboli aba luno!  
Ebikomera tebimazeeko bantu mirembe nneeyano!  
Owokuwuulwa emikuzannyan, alinzwa kikomera?  
Ppolisi yabaguddeko abo,yabaggye mu kikomera!  
Mmotoka zibbiddwa ezo, zitemerwa mu bikomera!  
Emmundu ezuulibwa, nga nkukulire mu kikomera!  
Biyaaye n'amagendo, bifumbekeddemu bikomera!  
Ebikomera bikisa ebintu kafukunya!

Ebikomera bye ndoja wattu byo obimanyi?  
Tindira ttafaali ne sementi kyo ng'okifunye,  
Simba bu falaawo bwo bukule obukomeke,  
Emiti egyo n'ebiwempe bikola ekikomera,  
Amabaati amagatte ku bbali kiba kikomera,  
Laba ssenggenge ku nkoma nakyo kikomera,  
Enju nzimbe kwetoloola ng'ekyo kikomera,  
Aguuma masimbe kwebungulula kikomera.  
Ebikomera bingi ebyo kafukunya!

Wabeera ekibi n'ekirungi bajjajja baagera.  
Kale bwe guli bwe gutyo ne ku bikomera,  
Anti kirimuttu kyo nnyinikyo y'akimanya,  
Kagaali mmotoka ebindi otereka n'oteeka,  
Agabbi ggulawo okira Lubigi mu kuteeka,  
'Gundi wuuli asiika' basigala kuteebereza,

### **Ebibuuzo**

- (i) Obutontomi bulagidwa butya mu kitontome? (obubonero 8)
- (ii) Bwosoma ekitontome kino kikuteeka mu mbeera ki era lwaki?  
(Leeta ensonga satu (3) lwaki mbeera eyo?) (obubonero 4)
- (iii) Nyonnyola ebintu eby'enjawulo omuwandiisi bye yeeyambisizza  
okuzimba eddoboozi mu kitontome. (obubonero 3)
- (iv) Omuwandiisi akozeseza atya olukusa lwa batontomi mu kitontome kino?  
(obubonero 7)
- (v) Ebirowoozo by'omuwandiisi birambuluddwa bitya mu kitontome?  
(obubonero 3)

7. Nyonnyola ebintu eby'enjawulo Kizza Mukasa bye yawandiikkako mu kitabo  
kye *Omulyammere kkoyi*. (obubonero 25)

### **HUGO SSEMATIMBA: *Abooluganga ab'eenda emu***

8. Soma ekitontome kino n'olvannyuma oddemu ebibuuzo ku nkomerero  
yaakyo.

### **LUJUUJU**

Ayiriitira avumbegedde enkaayi  
Agozoobana anywedde enguuli  
Akuluusana aweesa amazzi  
Laba bwe yekatankira obugiraasi?

Wo! Omwenge nga mu'si nnyo  
Lujuuju n'adibagana ng'awulira  
Entuuyo zimuyitamu ng'atudde  
Gy'obeera asiyaguuse mu ttuntu  
Yenna n'afuluutira ku muyiiro  
Oluusi n'afuluutira ku muyooro  
Nabologera mu ddiiro.

We bamuyoolawo ng'efaliso  
We bayiringula ng'eteteme  
We bamuganzika eyo ebweru  
Wo! Omwenge nga mubi nnyo?

Ebinyomo ne bimulingiza mu nnyindo  
Munyeera n'anyonyoogera mu nsingo  
Ensowera ne zimusokoola amannyo  
Omuntu n'ayiriitira nga bbaasi?

Omwenge nga mu nzikiza  
Ofa totegedde kikwabuluza  
Era kawenkene nnamuzisa  
Omubbi adda ku bbali kkunguyiza

Bannange akafa omukkuto tekalulumma  
Ssebo ow'omwenge afiira ku ccupa  
Afa yeeminsa ng'awunzika ndeku  
Ndiwlilira mu Ssoli afiira ku mpeke

Omwenge gumazeewo abakulu n'abato  
Okuva e Bulindo yogaayoga Ssemuto  
Ab'e Seguku, Namasuba ne mu nyendo  
Nga gubatema engalike mu kabbuli

Bannange omwenge guno luttamaka  
Bw'ogunywa ennyo n'ocoppa  
Nnaalongo wo akulekawo n'aleppa  
Obwana ne bwennyika ne bwepima  
Essaati n'eyulika ng'olaba!  
Nga ne Ssentete eddaabiriza ekubuze  
Amatama gakwengerera ng'atalya!  
N'oba wa laisi ng'azinira ku ntoli!

Ensimbi gy'oterese ku bbali  
N'evaayo olw'ennyonta ya bbiya!  
Ekibanja mw'obadde ng'okaga  
Omuli nebiggya bya Ssebo.  
N'okitunda ng'atalimu magezi!

Teebereza bw'obitebya ng'owoza  
Bwewatunda n'amagufa ga Ssebo  
Ng'ogawiutamu omwenge gw'eccupa  
Mazima ddala njawulo ki n'omulalu ob'empisi!

Bw'ogunywa ennyo n'osiiba ng'obuga  
Amagulu ne gaggwam'i endasi  
Owoza tegampagira ng'osoby  
Songa "endiro" y'egakubye ki bbomu!  
Gesibye "nkoko - etakula" lwa ndeku!

Abakulaba be baseka ng'ogoma  
“Laba omusajja bw’atagala mu kkubo”  
Omutwe gwe gujudde kkangala?  
Songa “akaliga” ke katalaaga ekkubo!

Mugunye nga mwerekamu bassebo  
Okunywa ne weemalamu kya nsonyi  
Buli ky’okola opimemu ly’eggezi  
Ekibi kigwana wala bassebo!

**Ebibuuzo:**

- (i) Menya ebifaananyi bitaano (5) ebyeyambisiddwa mu kitontome kino. (obubonero 5)
- (ii) Nyonnyola ku bukulu bw’obubonero obweyambisiddwa mu kitontome kino. (obubonero 5)
- (iii) Obutontomi bulagiddwa butya mu kitontome kino? (obubonero 8)
- (iv) Bw’osoma ekitontome kino kikuteeka mu mbeera ki era lwaki?  
Leeta embeera bbiri(2) (obubonero 4)
- (v) Nyonnyola amakulu g’ebigambo bino nga bwe bikozeseddwa mu kitontome.  
(a) Lujuuju  
(b) Yeeminsa  
(c) ng’okaga (obubonero 3)
9. Ssematimba afubye nnyo okutontoma ku by’obuwangwa mu bitontome bye.  
Kino akikoze atya? (obubonero 25)

**EKITUNDU C:**

**Ddamu ekibuuzo kimu kyokka ng’okiggya mu nnamba 10, 11, 12, oba 13.**

**WAALABYEKI MAGOBA: Namulanda**

10. a; Ng’akubikka ki?  
b; Ddiba lyambuzi  
a; Nnyabula wulira ezzike essirusiru ettoletoole eryo! Eribonyaabonya ne lifutyanka kibunwomu ono omulamba asikiriza nga Musoke atimbaganye ku olubaale! Akaliba k’embuzi nako bakeebikka? Olaba n’akaana akawere terikabuna naye alibissa omuntu omukulu.  
c; Nakiganda Katonda saagala akuwe enswa ggwe okubirire, wulira muwala?  
b; Yee taata  
c; Ka nve mu kwekookoota ng’omuko asaba enkoko ku buko, ba simanyi “enkozo zino nazo ziwooma ng’ez’ewaffle” kino kiragiro kangaawo ono mufumbirwe leero kati.

**Ebibuuzo:**

- (i) Baani aboogerezeganya mu katundu ako? (obubonero 3)  
(ii) Nyonnyola ensibuko yakakuubagano akali wakati wabantu ab’ogerezeganya mu katundu ako. (obubonero 4)

**Bikkula**

11. (iii) Nyonnyola ebigendererwa by'omuwandiisi mu kututeera ekitundu omuggyiddwa akatundu ako mu muzannyo *Namulanda*. (obubonero 18)
11. Omuwandiisi wa *Namulanda* atulaze atya ebikolwa ebikwasa abasomi be ku ttama okusobola okufunamu eby'okuyiga? (obubonero 25)

#### **MIREMBE NTANGAALE: Ssemitego omuyizzi kkungwa**

12. a; Taata! Wasse maama! E? Wooowe ee,ee!  
b; (Gamwesibye era afa gatunula n'asikondoka mpola)  
c; Yaayee! Wuwi ii ii (abaguka ng'abaka erimu ku mafumu ga Ssentego n'alimutu mizaamu) taata njenda kukutta.  
a; Kale vvawo. Oyo kitaffe tumuyambe buyambi. Bwe tumutta ani anaatulabirira? Wuuyo nnyaffe amaze okufa.  
b; Baana bange, gwansinze, munsonyiwe, nnabaddoko ekifu, lubaale omukazi yanguyizzaguyizza, yantibye bbula, yambuzizaabuzizza n'antyabiramu amazina nampokera obutitimbe bw'ensimbi era nansuubiza ebantu ebisobaasobanye ng'obugulu bw'eggongolo ku nkomerero yabyonna nandagira nzite mukyala wange.
- (i) Akañtundu ako kasimbuddwa mu kitundu ki eky'omuzannyo? (obubonero 2)
- (ii) Menya abantu aboogerezeganya mu katundu ako a, b, ne c. (obubonero 3)
- (iii) Nnyonyola ekigendererwa kyomuwandiisi okututeeramu ekitundu ekyo omusimbuddwa akatundu kano mu muzannyo. (obubonero 10)
- (iv) Nyonnyola ebizibu ebifumbekedde mu mululu gw'ebyenfuna nga Mercy Ntangaare bwabirambulula. (obubonero 10)
13. Omuntu yenna asoma omuzannyo guno asobola okumanya enneeyisa y'abakyala b'omulembe guno. Kakasa kino n'eb yokulabirako okuva mu muzannyo *Ssemitego omuyizzi kkungwa*. (obubonero 25)

#### **BIKOMYE WANO.**

Name: .....

Centre/Index No: .....

School.....

Signature.....

**P525/1**

**CHEMISTRY**

**Paper 1**

**July/August**

**2  $\frac{3}{4}$  hours**



**WAKISSHA JOINT MOCK EXAMINATIONS**

**Uganda Advanced Certificate of Education**

**CHEMISTRY**

**Paper 1**

**2 hours 45 minutes**

**Instructions to Candidates**

- Attempt all questions in section A and any six questions from section B.
- All questions are to be answered in the spaces provided.
- A Periodic Table with relevant atomic masses is supplied at the end of the paper.
- Mathematical tables (3 figures) and non-programmable silent scientific calculators may be used.
- Illustrate your answers with equations where applicable.
- Molar gas volume at s.t.p =  $22.4 \text{ dm}^3$

**For Examiner's Use Only**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | Total |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|-------|
|   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |       |

## SECTION A (46 MARKS)

Attempt all questions in this section.

1. Peroxodisulphate ions oxidise Iodide ions according to the equation:



The rate equation for the redox reaction is given by;

$$\text{Rate} = k[\text{S}_2\text{O}_8^{2-}][\text{I}^-] \quad \text{at } 25^\circ\text{C}$$

- (a) State two methods by which the rate of reaction above can be determined.

(01 mark)

.....  
.....

- (b) State the effect of the following changes on the rate. In each case give a reason for your answer.

- (i) Addition of Iron (II) sulphate solution to the reaction mixture.

(1½ marks)

.....  
.....

- (ii) Doubling the concentration of peroxodisulphate ions while the concentration of Iodide ions is halved.

(1½ marks)

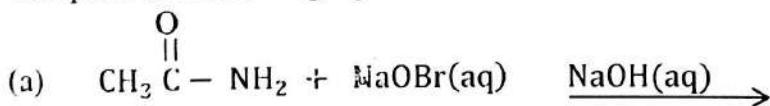
.....  
.....  
.....

- (iii) Using ice-cold solutions of both reactants.

(1½ marks)

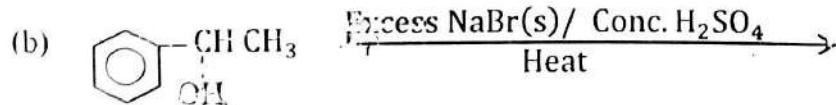
.....  
.....

2. Complete the following equations and in each case name the major organic product.



Name of the product.....  
.....  
.....

(1½ marks)



Name of the product.....  
.....  
.....

(1½ marks)



Name of the product(s).....  
.....  
.....

(1½ marks)

3. A Manganese is a transition element which forms stable compounds in oxidation states +2, +4 and +7.
- (a) Write the formula of the oxide of manganese in oxidation state; (1½ marks)
- (i) +2: .....
- (ii) +4: .....
- (iii) +7: .....
- (b) Write an equation for the reaction that takes place between: (01 mark)
- (i) oxide in +2 and dilute sulphuric acid. ....
- (ii) hot concentrated hydrochloric acid and the oxide in +4. .... (01 mark)
- (iii) oxide in +7 and dilute sodium hydroxide solution. .... (01 mark)
- .....
4. Methanoic acid in an organic solvent such as benzene dimerises.
- (a) State the; (½ mark)
- (i) type of bonds between the acid molecules in benzene. ....
- (ii) observed relative formula mass of methanoic acid. .... (½ mark)
- .....
- (b) The vapour pressure of pure benzene at 30°C is 122mmHg. Calculate the vapour pressure of a solution containing 0.092g of methanoic acid in 156g of benzene at 30°C. (2½ marks)
- .....
- .....
- .....
- .....
- .....
- .....
- (c) Compare your answer in (b) above with the vapour pressure of pure benzene at 30°C. State the reason for your answer. (1½ marks)
- .....
- .....
- .....
- .....
- .....
- .....
- .....
5. Ammonium sulphate reacts with water as shown below.
- $$\text{NH}_4^+(\text{aq}) + \text{H}_2\text{O(l)} \rightleftharpoons \text{NH}_3(\text{aq}) + \text{H}_3\text{O}^+(\text{aq})$$
- The pH of an aqueous solution of ammonium sulphate was found to be 6.24 at 25°C.

**Turn Over**

Calculate the;

- (a) (i) concentration of hydroxonium ions in the solution. (1½ marks)

.....  
.....  
.....

- (ii) concentration of gdm<sup>-3</sup> of ammonium sulphate in the solution.  
(K<sub>b</sub> for ammonia at 25°C is  $1.78 \times 10^{-5}$  moldm<sup>-3</sup>) (03 marks)

.....  
.....  
.....  
.....  
.....  
.....  
.....

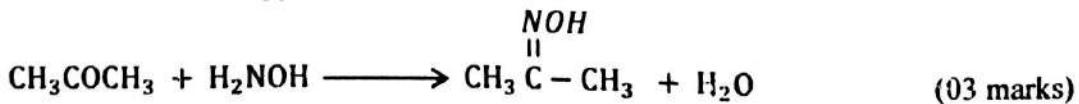
- (b) (i) State what would happen to the pH of the solution in (a) if an equimolar solution of aqueous ammonia is added to it. (½ mark)

.....  
.....  
.....  
.....

6. (a) Define the term bond dissociation energy. (1 mark)

.....  
.....

- (b) The bond energies of; C = O, N – H, C= N and O – H are 799, 391, 615 and 463 KJmol<sup>-1</sup> respectively.  
Calculate the enthalpy of the reaction.



.....  
.....  
.....  
.....  
.....

Chlorine forms oxo acids of the formulae;  $\text{HOCl}$ ,  $\text{HClO}_2$ ,  $\text{HClO}_3$  and  $\text{HClO}_4$ .

- (a) State how acid strength of the oxo acids varies with oxidation state of chlorine. (01 mark)

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

- (b) Explain your answer in (a). (03 marks)

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

- (c) A solution containing  $\text{HClO}_4$  was added to 1M sulphuric acid followed by Iron (II) sulphate solution.

- (i) State what was observed. (1½ mark)

- (ii) Write an equation for the redox reaction that takes place. (1½ marks)

.....  
.....  
.....  
.....

8. State what would be observed and write an equation for the reaction that would take place when each of the following substances are mixed.

- (a) Diethylamine and ice-cold sodium nitrite in the presence of concentrated hydrochloric acid. (1½ marks)

Observation: .....

Equation: .....

- (b) Sodium benzoate solution and dilute hydrochloric acid. (1½ marks)

Observation: .....

Equation: .....

- (c) Benzene diazonium chloride and phenol in alkaline medium. (02 marks)

Observation: .....

Equation:

.....  
.....  
.....

Tin and carbon belong to group IV of the periodic table.

(a) Write the;

(i) formulae of stable chlorides of Tin and Carbon.

(1½marks)

(ii) equation for the reaction of the chlorides in (a)(i) above with water.

(02 marks)

.....  
.....  
.....

(b) Excess acidified Tin (II) sulphate solution was added to potassium dichromate solution.

(i) State what was observed.

(01 marks)

.....  
.....  
.....

## SECTION B (54 MARKS)

Attempt any six questions from this section.

10. (a) What is meant by the term **cell constant**? (01 mark)

.....  
.....  
.....

- (b) The molar conductivity of 0.05M of Magnesium chloride placed between electrodes of cross sectional area  $1.25664 \times 10^{-3} \text{m}^2$  and 0.12m apart is  $0.01945 \Omega^{-1} \text{m}^2 \text{mol}^{-1}$ . When 0.05M Barium chloride solution is placed in the same cell, the resistance was  $93.92\Omega$ .

Calculate the;

- (i) cell constant. (01 mark)

.....  
.....

- (ii) molar conductivity of 0.05M Barium chloride solution. (03 marks)

.....  
.....  
.....  
.....

- (c) (i) Compare the molar conductivities of the electrolytes in (b) above.

(01 mark)

.....  
.....

- (ii) Explain your answer. (03 marks)

.....  
.....  
.....  
.....

11. Compound Q consists of carbon, 77.78%, hydrogen 7.41%, the rest being oxygen. When steam distilled at 95°C and 760mmHg, the distillate contained 53.18% by mass of Q. the vapour pressure of water is 639mmHg.

- (a) Determine the;

- (i) empirical formula of Q. (02 marks)

.....  
.....  
.....

- (ii) - molecular formula of Q.

(03 marks)

- (b) Q burns with a sooty flame and gives no observable change with neutral Iron (III) chloride solution. Q reacts with ethanoic acid to form a sweet fruity smelling compound.

**Write the:**

- (i) structural formula and IUPAC name of Q. (01 mark)

- (ii) structural formula of an isomer of Q which does not react with sodium metal. (½ mark)

- (c) Q was added to concentrated hydrochloric acid in the presence of anhydrous Zinc chloride and the mixture warmed.

- (i) State what was observed. (½ mark)

- (ii) Suggest a suitable mechanism for the reaction that takes place. (02 marks)

12. (a) Na, Al and P belong to period 3 of the Periodic Table. Write the formulae of the chlorides of each element and state the type of bond in the table below.(3½ marks)

| Element                | Na | Al | P |
|------------------------|----|----|---|
| Formula(e) of chloride |    |    |   |
| Type of bond           |    |    |   |

- (b) State the trend in melting points of the chlorides in (a) above. (2½ marks)  
Explain your answer.

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

- (c) Describe the reaction of the chlorides of; Na, Al and P with water. (03 marks)

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

13. (a) Use equations to show the following conversions can be effected.

- (i) 1, 1 -dichloropropene to  $CH_3CH = CHOH$  (03 marks)

.....  
.....  
.....  
.....  
.....

- (ii) But-2-yne to  $CH_3\overset{OH}{C}(\overset{|}{CH_2}CH_3)COOH$  (03 marks)

.....  
.....  
.....  
.....  
.....

- (b) Without using equations describe how 2-bromoethanol can be synthesized from ethanoic acid. (03 marks)

---

---

---

---

14. Ethanol and cyclohexane boil at  $78.4^{\circ}\text{C}$  and  $80.8^{\circ}\text{C}$  respectively at  $760\text{mmHg}$  while an azeotropic mixture (43% ethanol and 57% cyclohexane) boils at  $64.8^{\circ}\text{C}$ .

- (a) (i) Define the term **azeotropic mixture**. (01 mark)

(ii) State the type of deviation from Raoult's in the ethanol-cyclohexane system. Explain your answer. (2½ marks)

- (b) (i) Sketch a well-labelled boiling point composition diagram for ethanol-cyclohexane system. (2½ marks)

- (ii) State the products of **fractional distillation** of a liquid mixture containing 50% ethanol. (02 marks)

.....  
.....

- (c) State any two methods by which the azeotropic mixture of ethanol and cyclohexane can be separated. (01 mark)

.....  
.....

15. (a) Name the reagent that can be used to distinguish between each of the following pairs of substances. State what would be observed in each case.

- (i)  $NiCO_3(s)$  and  $BaCO_3(s)$  (02 marks)  
Reagent:

.....  
.....

Observations.

.....  
.....

- (ii)  $KI(aq)$  and  $NaBr(aq)$  (02 marks)  
Reagent:

.....  
.....

Observations.

.....  
.....

- (b) Explain why;

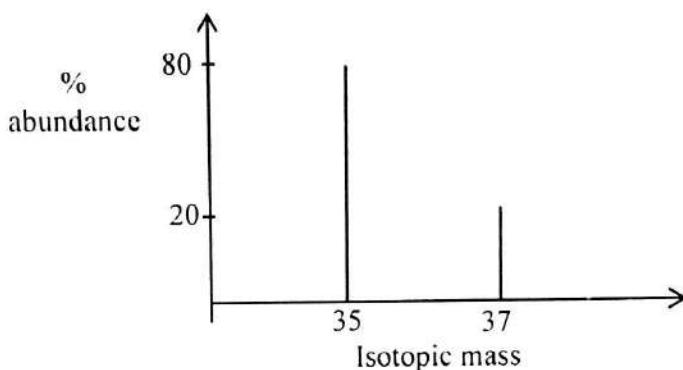
- (i) a white precipitate is formed in a brown solution when potassium iodide solution is added to an aqueous solution of Copper (II) chloride. (2½marks)

.....  
.....  
.....  
.....

- (ii) there is no observable change when hydrogen sulphide gas is bubbled into acidified Nickel (II) sulphate solution. (2½marks)

.....  
.....  
.....

- .....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....
16. (a) The mass spectrum of chlorine atoms is shown in the figure below.



- (i) Name the most abundant isotope of chlorine. (01 mark)
- .....  
.....  
.....  
.....  
.....  
.....  
.....  
.....
- (ii) Calculate the average relative atomic mass of chlorine. (02 marks)
- .....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

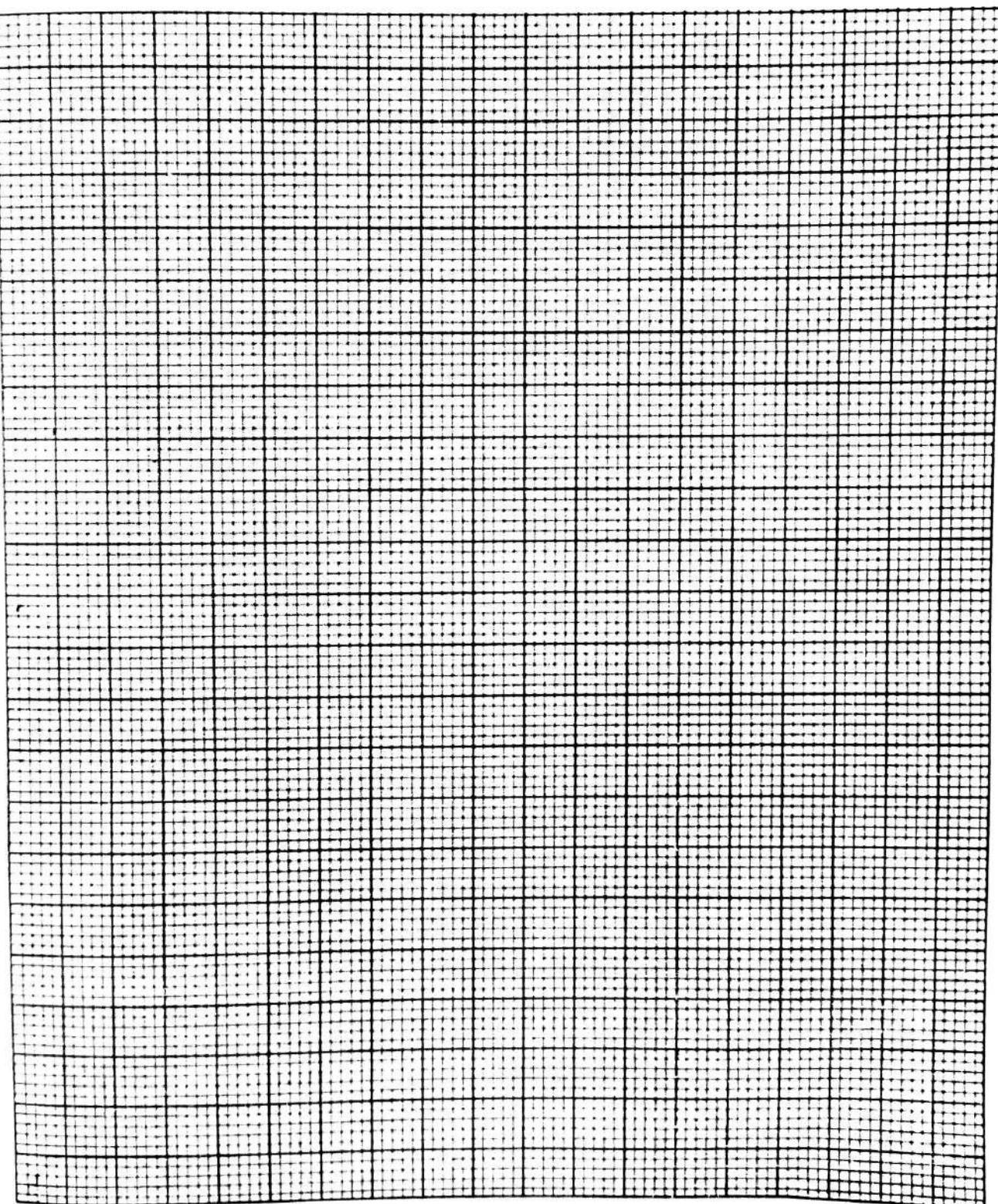
- (b) Explain why the mass spectrum of chlorine gas has three peaks. (04 marks)
- .....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

- (c) State two advantages of using the mass spectrometer to determine relative atomic mass of elements. (02 marks)
- .....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

17. Different masses of a non-volatile compound X were separately dissolved in 250g of water at 101.325 Kpa and the freezing point of the resultant solution measured.

|                                |       |       |       |       |       |       |
|--------------------------------|-------|-------|-------|-------|-------|-------|
| Mass of X in 250g of water (g) | 5.0   | 10.0  | 15.0  | 20.0  | 25.0  | 30.0  |
| Freezing point (°C)            | -0.11 | -0.22 | -0.32 | -0.43 | -0.54 | -0.65 |

- (a) (i) Plot a graph of freezing point against mass of X in 250g of water. (2½ marks)



Use your graph to determine the;

(01 mark)

- (ii) freezing point of pure water.

(iii) molar mass of compound X.

(2½ marks)

- (cryoscopic constant of water is  $1.86^{\circ}\text{C Kg}^{-1} \text{ mol}^{-1}$ )

(b) Explain why cryoscopy is not a suitable method to determine the molar mass of;

- (i) ionic compounds with water as a solvent.

(1½ marks)

- (ii) short chain carboxylic acids dissolved in hexane.

(1½ marks)

# THE PERIODIC TABLE

| 1                 | 2                 |                   |                   |                  |                  |                  |                   |                   |                   |                   |                   |                  |                   | 3                  | 4                  | 5                  | 6                 | 7                | 8                |
|-------------------|-------------------|-------------------|-------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------------------|-------------------|--------------------|--------------------|--------------------|-------------------|------------------|------------------|
| 1<br>H<br>1.0     |                   |                   |                   |                  |                  |                  |                   |                   |                   |                   |                   |                  |                   | 1<br>H<br>1.0      | 2<br>He<br>4.0     |                    |                   |                  |                  |
| 3<br>Li<br>6.9    | 4<br>Be<br>9.0    |                   |                   |                  |                  |                  |                   |                   |                   |                   |                   |                  |                   | 5<br>B<br>10.8     | 6<br>C<br>12.0     | 7<br>N<br>14.0     | 8<br>O<br>16.0    | 9<br>F<br>19.0   | 10<br>Ne<br>20.2 |
| 11<br>Na<br>23.0  | 12<br>Mg<br>24.3  |                   |                   |                  |                  |                  |                   |                   |                   |                   |                   |                  |                   | 13<br>Al<br>27.0   | 14<br>Si<br>28.1   | 15<br>P<br>31.0    | 16<br>S<br>32.1   | 17<br>Cl<br>35.4 | 18<br>Ar<br>40.0 |
| 19<br>K<br>39.1   | 20<br>Ca<br>40.1  | 21<br>Sc<br>45.0  | 22<br>Ti<br>47.9  | 23<br>V<br>50.9  | 24<br>Cr<br>52.0 | 25<br>Mn<br>54.9 | 26<br>Fe<br>55.8  | 27<br>Co<br>58.9  | 28<br>Ni<br>58.7  | 29<br>Cu<br>63.5  | 30<br>Zn<br>65.7  | 31<br>Ga<br>69.7 | 32<br>Ge<br>72.6  | 33<br>As<br>74.9   | 34<br>Se<br>79.0   | 35<br>Br<br>79.9   | 36<br>Kr<br>83.8  |                  |                  |
| 37<br>Rb<br>85.5  | 38<br>Sr<br>87.6  | 39<br>Y<br>88.9   | 40<br>Zr<br>91.2  | 41<br>Nb<br>92.9 | 42<br>Mo<br>93.9 | 43<br>Tc<br>98.9 | 44<br>Ru<br>101   | 45<br>Rh<br>103   | 46<br>Pd<br>106   | 47<br>Ag<br>108   | 48<br>Cd<br>112   | 49<br>In<br>115  | 50<br>Sn<br>119   | 51<br>Sb<br>122    | 52<br>Te<br>128    | 53<br>I<br>127     | 54<br>Xe<br>131   |                  |                  |
| 55<br>Cs<br>133   | 56<br>Ba<br>137   | 57<br>La<br>139   | 72<br>Hf<br>178   | 73<br>Ta<br>181  | 74<br>W<br>184   | 75<br>Re<br>186  | 76<br>Os<br>190   | 77<br>Ir<br>192   | 78<br>Pt<br>195   | 79<br>Au<br>197   | 80<br>Hg<br>201   | 81<br>Tl<br>204  | 82<br>Pb<br>207   | 83<br>Bi<br>209    | 84<br>Po<br>(209)  | 85<br>At<br>(210)  | 86<br>Rn<br>(222) |                  |                  |
| 87<br>Fr<br>(223) | 88<br>Ra<br>(226) | 89<br>Ac<br>(227) |                   |                  |                  |                  |                   |                   |                   |                   |                   |                  |                   |                    |                    |                    |                   |                  |                  |
|                   |                   |                   | 57<br>La<br>139   | 58<br>Ce<br>140  | 59<br>Pr<br>141  | 60<br>Nd<br>144  | 61<br>Pm<br>(145) | 62<br>Sm<br>152   | 63<br>Eu<br>150   | 64<br>Gd<br>152   | 65<br>Tb<br>159   | 66<br>Dy<br>162  | 67<br>Ho<br>165   | 68<br>Er<br>167    | 69<br>Tm<br>169    | 70<br>Yb<br>173    | 71<br>Lu<br>175   |                  |                  |
|                   |                   |                   | 89<br>Ac<br>(227) | 90<br>Th<br>232  | 91<br>Pa<br>231  | 92<br>U<br>238   | 93<br>Np<br>237   | 94<br>Pu<br>(244) | 95<br>Am<br>(243) | 96<br>Cm<br>(247) | 97<br>Bk<br>(247) | 98<br>Cf<br>251  | 99<br>Es<br>(254) | 100<br>Fm<br>(257) | 101<br>Md<br>(256) | 102<br>No<br>(254) | 103<br>Lw         |                  |                  |

1. Indicates atomic number.

II

2. Indicates relative atomic mass.

1.0

END

Name:.....Centre/Index No. ....

School:.....Signature.....

**P515/1**  
**PRINCIPLES**  
**AND PRACTICES**  
**OF AGRICULTURE**  
**PAPER 1**  
**July/August**  
**2 ½ hours**



**WAKISSHA JOINT MOCK EXAMINATIONS**

**Uganda Advanced Certificate of Education**  
**PRINCIPLES AND PRACTICES OF AGRICULTURE**  
**PAPER 1**

**2 hours 30 minutes**

**INSTRUCTIONS TO CANDIDATES:**

- This paper consist of sections A and B
- Answer all questions in both sections.
- All answers should be written on this question paper.

**FOR EXAMINER'S USE ONLY**

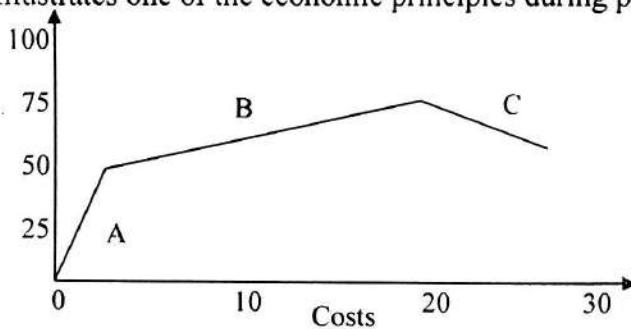
| Question     | Marks | Examiner's No./Initials |
|--------------|-------|-------------------------|
| Section A    |       |                         |
| 31           |       |                         |
| 32           |       |                         |
| 33           |       |                         |
| 34           |       |                         |
| 35           |       |                         |
| 36           |       |                         |
| 37           |       |                         |
| <b>TOTAL</b> |       |                         |

## SECTION A (30MARKS)

*Write the letter corresponding to the most correct answer in the box on the right hand side for each question.*

1. Which one of the nutrients below becomes less available to crops at low pH?  
A. Potassium.  
B. Manganese.  
C. Iron.  
D. Phosphorous.
  
2. One of the following describes the anti-rickets triangle;  
A. Ca, P and Vit. D are required in equal amounts.  
B. Ca, P and Vit D are required to prevent rickets.  
C. Ca, P and Vit. D are used in the treatment of rickets.  
D. Any of Ca, P or Vit D can be used to prevent rickets.
  
3. Which one of the following is true about the use of a mould board? It is;  
A. affected by vegetation cover of an area.  
B. not affected by soil moisture content.  
C. suitable for certain types of crops to be grown.  
D. not affected by soil types.
  
4. Crops and livestock using limited land is an example of;  
A. supplementary products.  
B. complementary products.  
C. competitive products.  
D. joint products.
  
5. Which of the following influences the storage life of milk?  
A. Health of the milker.  
B. Condition of storage.  
C. Age of the milking cow.  
D. Cow treatment after milking.
  
6. A machine with an efficiency of 75% is used to lift a load of 600N by applying an effort of 40N. Calculate its velocity ratio.  
A. 60  
B. 15  
C. 30  
D. 20
  
7. There is a limited biomass at each trophic level in a food chain because at each level, there is progressive,  
A. reduction in numbers of organisms.  
B. loss of energy.  
C. reduction in size of organisms.  
D. reduction in amount of food.
  
8. The farming system characterized by growing of short term crops under intensive management is;  
A. Urban farming.  
B. Arable farming.  
C. Market gardening.  
D. Mixed cropping.

9. During the Calvin cycle, glycerol is formed from  
 A. Phosphoglyceraldehyde.  
 B. Phosphoglyceric Acid.  
 C. Pyruvic acid.  
 D. Ribulose bisphosphate.
10. Which of the following is an adaptation of indigenous breeds of cattle to live in tropics?  
 A. Strong legs to walk long distances.  
 B. Hump to store fat.  
 C. Thin coat with many sweat glands.  
 D. Big body to store food.
11. Plant materials are composted prior to application in order to;  
 A. ease their application.  
 B. reduce the c: n ratio.  
 C. obtain a dark colour.  
 D. reduce moisture content.
12. Which one of the following chemical substances can serve as a selective weed killer?  
 A. Auxins.  
 B. Cytokinins.  
 C. Abscisic acid.  
 D. Ethene.
13. Fig.1 Illustrates one of the economic principles during production.



- Which of the following principles is being illustrated by section B?  
 A. Principle of economies of scale.  
 B. Principle of equi-marginal returns.  
 C. Principle of diminishing returns.  
 D. Principle of opportunity cost.
14. Which of the following is the most important determinant of efficiency of land resources?  
 A. Improved technology.  
 B. Good management.  
 C. Security of land tenure.  
 D. Availability of capital to invest.
15. The purpose of root pruning in the management of agro-forestry trees is to:  
 A. reduce nutrient uptake.  
 B. reduce on the number of leaves formed.  
 C. prevent lateral extension of roots and reduce competition with other   
 D. allow the plan's to get nutrients from deeper layers of the soil.

16. Which of the following would be directly affected by planting depth of a maize seed?  
A. Seed dormancy.  
B. Seed pest attack.  
C. Seed emergency.  
D. Plant population.
17. Which one of the following enzymes would be adversely affected by high pH?  
A. Trypsin.  
B. Pepsin.  
C. Amylase.  
D. Lipase.
18. A farmer opting to make a nominal mix of concrete to floor a room used by heavy machinery would have cement: sand: gravel in the following ratios,  
A. 1:4:4  
B. 1:2:2  
C. 1:6:5  
D. 1:8:6
19. The measure of extra physical output per unit of extra input on the farm is;  
A. over-production.  
B. yield index product.  
C. marginal product.  
D. technical efficiency.
20. In a balance sheet post-paid expenses are,  
A. a liability.  
B. an asset.  
C. an inventory.  
D. an expense.
21. In order to increase root elongation in vegetable seedlings the farmer should:-  
A. add rooting hormones.  
B. add organic matter.  
C. carry out inoculation.  
D. apply Nitrogen Fertilizers.
22. In the life cycle of the blue tick the larva is found on:-  
A. 2<sup>nd</sup> host.  
B. 1<sup>st</sup> host.  
C. 3<sup>rd</sup> host.  
D. 2<sup>nd</sup> and 3<sup>rd</sup> host.
23. Which of these workshop tools is necessary while determining vertical straightness of a wall?  
A. Plumb bob.  
B. Spirit level.  
C. Marking Gauge.  
D. Tape measure.

24. A farmer has 2 hectares of land and at the end of the year he had his variable costs amounting to 450,000/=. If he sold items worth Shs. 650,000/=, what was his gross margin assuming he paid rent worth 50,000/= in the same year?  
A. 100,000/=   
B. 75,000/=   
C. 200,000/=   
D. 150,000/=
25. A soil sample was analyzed and it was found to have a volume of 80gm with a mass of 78gm, what was the % air by volume in the sample.  
A. 7%   
B. 0.975%   
C. 2.5%   
D. 80%
26. Which of the following chemical reactions in weathering results in rock decomposition?  
A. Hydrolysis.   
B. Reduction.   
C. Solution.   
D. Hydration.
27. Which one of the following practices ensures that seedlings get adapted to field conditions after transplanting?  
A. Hardening Off.   
B. Pricking Out.   
C. Shedding.   
D. Thinning.
28. Which one of the following is not a component of environment stress?  
A. Lack of light.   
B. Lack of shelter.   
C. Topography.   
D. Disease.
29. Which one of the following influences the effectiveness of a pre-emergence herbicide?  
A. Degree of wetting of leaves.   
B. Type of crop grown.   
C. Stage of crop growth.   
D. Degree of wetting of the soil.
30. Which one of the following processes is the normal sequence of protein synthesis?  
1. Synthesis of amino acids  
2. Activation of amino acids  
3. Transcription  
4. Translation  
A. 2, 3, 4 and 1   
B. 1, 2, 3 and 4   
C. 2, 3, 1 and 4   
D. 3, 2, 4 and 1

**Turn Over**

## SECTION B (70 MARKS)

*Write your answers in the spaces provided.*

31. (a) Define the term hormone. (02marks)

.....  
.....

- (b) The table below shows hormones involved in the oestrous cycle of a cow. Study the table and then fill in the missing information. (04marks)

| Site of production | Hormone Secreted | Effect of the hormone on the cycle |
|--------------------|------------------|------------------------------------|
| Uterus             |                  |                                    |
|                    |                  | Development of follicles           |
| Corpus luteum      |                  |                                    |
|                    |                  | Ovulation                          |

- (c) Using knowledge of the oestrous cycle, show how these hormones regulate the oestrous cycle in a cow. (02marks)

.....  
.....  
.....  
.....  
.....  
.....

- (d) Outline **four** signs exhibited by a cow at standing heat. (02marks)

.....  
.....  
.....  
.....  
.....  
.....

32. (a) Explain the following as used in the nutrition of farm animals.

- (i) Feed additives. (01mark)

.....  
.....  
.....  
.....

(ii) Biological value. (01mark)

.....  
.....  
.....  
.....

(iii) Production from grass alone. (01mark)

(b) Mention any **three** advantages of feeding livestock on roughages. (03marks)

.....  
.....  
.....  
.....  
.....  
.....

(c) Give **four** advantages cattle have over pigs as far as digestion is concerned. (04marks)

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

33. (a) Differentiate between increasing returns and diminishing returns in a production function. (02marks)

.....  
.....  
.....  
.....

(b) Outline **four** factors that influence the level of capital investment in a farm business. (04marks)

.....  
.....  
.....  
.....  
.....  
.....

**Turn Over**

- (c) Identify **four** short comings in the implementation of the current parish development model in Uganda. (04marks)
- .....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

34. (a) Explain **four** ways how timely planting increases crop yields. (04marks)
- .....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

- (b) Explain **three** signs exhibited by late planted crops. (03marks)
- .....  
.....  
.....  
.....  
.....  
.....  
.....

- (c) Suggest **three** remedial practices a farmer can undertake to save late planted crops from further deterioration. (03marks)
- .....  
.....  
.....  
.....  
.....  
.....  
.....

35. (a) What is meant by field efficiency of an implement? (01mark)
- .....  
.....  
.....  
.....

- (b) Field efficiency of most implements is not 100%, give **three** reasons why this is so. (03marks)

.....  
.....  
.....  
.....

- (c) Suggest **three** ways a farmer would increase the field efficiency of farm machinery. (03marks)

.....  
.....  
.....  
.....

- (d) A  $3 \times 30\text{cm}$  plough is moving at a speed of  $4\text{kmh}^{-1}$ . Calculate how much time it takes to plough a  $500\text{m} \times 500\text{m}$  field when the field efficiency is 70%. (03marks)

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

36. (a) Outline **two** regulations governing public and livestock health in Uganda. (02marks)

.....  
.....  
.....

- (b) Identify **two** relationships existing between public health and animal health act. (02marks)

.....  
.....  
.....

- (c) Give **three** reasons in support of the inclusion of public health concerns in livestock management programs. (03 marks)

.....  
.....  
.....  
.....

**Turn Over**

- (d) Outline **three** signs of environmental degradation as a result of urban livestock farming. (03marks)
- .....  
.....  
.....

37. An experiment was set up to investigate the effect of soil pH on the abundance of bacteria and fungi in percentage in a soil sample.

| Soil pH  | 4.0 | 6.0 | 7.4 | 9.5 | 10.4 | 12.5 | 13.4 | 14.0 |
|----------|-----|-----|-----|-----|------|------|------|------|
| Bacteria | 20  | 30  | 45  | 50  | 60   | 58   | 50   | 18   |
| Fungi    | 60  | 50  | 40  | 30  | 20   | 18   | 15   | 10   |

- (a) Describe how the abundance of the two organisms vary with soil pH. (03marks)
- .....  
.....  
.....

- (b) What **two** conclusions can you draw from the data? (02marks)
- .....  
.....  
.....

- (c) Give **two** ways how the above micro organisms affect crop growth. (02marks)
- .....  
.....  
.....

- (d) Explain **three** other factors that may affect the abundance of soil microbes. (03marks)
- .....  
.....  
.....

**END**