

HOME SCHOOLING MATERIAL

PASS A' LEVEL

**GEOGRAPHY, ECONOMICS,
LITERATURE & IT**



YOUR GUIDE AWAY FROM SCHOOL

SUBSIDIARY ICT PAPER TWO GUIDE



1. WORD PROCESSING

SKILL	File	A5	Portrait	Word art	Picture	Crop	Tight	Border	Shading	Size	Colour	Double strike	Art	Size	Footer	Save	Print	Total
EXPECTED	1	1	1	2	1	2	1	1	1	1	1	2	1	1	1	1	1	20

2. SPREADSHEETS

SKILL	File	Data entry	Total income	Projected balance	Actual balance	Difference	Projected expenditure	Actual expenditure	Ugx	Decimal places	Heading	Water mark	Orientation	Worksheet name	Save	Print	Total
EXPECTED	1	3	1	1	1	3	1	1	1	1	1	1	1	1	1	1	20

3. ELECTRONIC PRESENTATION

SKILL	Slide Type	Data entry	Pyramid	Speaker notes	Picture	Picture Size	Transitions	Date	Header	Date	Header	Save	Print	Total
EXPECTED	3	3	3	1	1	2	1	1	1	1	1	1	1	20

4. DATABASE MANAGEMENT SYSTEMS

SKILL	Data base	Table	Field	Data type	Primary key	Sh	Form	Formula	Header	Query	Report orientation	Ascending	Report header	Report footer	print	Total
EXPECTED	1	1	2	2	1	1	2	2	1	2	1	1	1	1	1	20

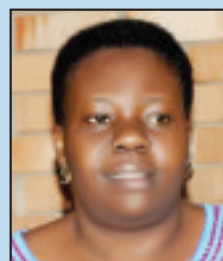
5. DESKTOP PUBLISHING

SKILL	File	Customise	Photo	Scheme	Background	Font type	Font size	Word art	Attention	Border	Orientation	Goal	Footer	Save	Print	Total
EXPECTED	1	3	2	1	1	1	1	2	1	1	1	1	2	1	1	20

ICT TEACHERS



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SUBSIDIARY ICT P. ONE (AICT008)

- (a) Define ICT.
(b) Discuss ways in which ICT can be used in education.
- Discuss the positive impact of ICT on security in Uganda.
- (a) Differentiate between a folder and a file.
(b) Describe the process of creating a file on a computer desktop for the first time.
- (a) Define a utility program (01 mark)
(b) Explain at least four utility programs and what they do.
- (a) What is a computer laboratory?
(b) Explain at least four computer lab rules.
- Explain five activities that can be done during computer system servicing and maintenance.
- (a) What is troubleshooting?
(b) What circumstances would require troubleshooting?
- What are the advantages of using a word processor as opposed to using a typewriter?
- Give three examples of:
 - Input devices.
 - Output devices.
- (a) Differentiate between a magnetic storage device and optical storage device.
(b) What advantages can be got from using a hard disk?
- Discuss the functions of the following:
 - Control Unit.
 - Arithmetic Logical Unit.
 - Registers.
 - Central Processing Unit.
- (a) Define an application software.
(b) What application software would be applicable for the following:
 - Creating an inventory.
 - Writing a letter.
 - Designing business cards.
 - Preparing a presentation.
- Explain at least five word processing features that would be used to make a good advert.
- Define the following as used in spreadsheet:
 - Rows
 - Columns
 - Cells
 - Worksheet
 - Cell referencing
- (a) Mention at least three computer peripherals.
(b) Give at least one of the functions of each of the peripherals mentioned above.
- (a) Differentiate between a window and Windows operating system.
(b) Explain at least three parts of a window.
- (a) Differentiate between the following as applied in ICT:
 - A virus and a worm.
 - A hacker and a cracker.
 - Software piracy and network piracy.
- (a) List any two ways in which computer viruses are transmitted.
(b) Explain at least three ways that can be used to protect the computer against viruses.
- (a) Distinguish between primary and secondary storage.
(b) Give an example of each of the types of storage mentioned above.
(c) Identify one advantage of a CD over a flash disk.
- (a) Define video conferencing?
(b) Mention at least three devices that you would need to participate in a video conference.
(c) Give at least one program/application that you can use for video conferencing.

LITERATURE IN ENGLISH PAPER TWO SOLUTIONS

SUITABILITY OF THE TITLE IN DRAMA ANSWERS

Discuss the suitability of the title to the following plays:

The Floods by John Ruganda
The Country Wife by William Wycherley
The Snake Farmers by Yusuf Serunkuma

JOHN RUGANDA: *THE FLOODS*

Let us first look at the literal meaning of the word "floods". We all know what happens when there is too much rain. Though rainfall is a sign of life and blessing from God, too much of it is catastrophic. It causes death and havoc to everything that lives. All those who had high hopes despair and die in agony. In the book of Genesis, The Flood of Noah's day was a year-long global catastrophe that destroyed the world, reshaped the continents, buried billions of creatures and laid down the rock layers. It was God's judgment on man's wickedness. Only eight righteous people and representatives of every kind of animal were spared aboard the Ark. The floods in the Bible were a sign of purification through destruction. God wiped out the wicked so that through the few survivors, He would bring up a new breed of a righteous race.

The title, *The Floods* then is a symbolic title. Like the biblical floods, the title suggests a symbol of destruction and terror. The symbol of the floods in the play helps the reader envisage the floods in Noah's times to help him relate the same horror that fills the hearts of the victims of the brutality and torture at the hands of a cruel government.

There are various instances in the play that, in relation to the explanation above, make *The Floods* a very suitable title for the play.

The citizens are severely oppressed by the government. They are underfed, unclothed, abused, whipped, raped and even killed. Through the dialogue between Bwogo and Nankya, we are meant to know that men have been deprived of the land that they fought for and the mercenaries are being used to terrorise the populace. Bwogo, who is the agent of the oppressive government, gives orders to the State Research Bureau to kill the citizens in large numbers. If anybody dared

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LITERATURE TEACHERS



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to cross the path of the government, they are then silenced and thrown into the lake.

Nankya says the island is barricaded with blood. The lake is bubbling with blood like cauldron and the main land is choking of it. At an international hotel, an innocent man's life is taken away on Bwogo's orders. He is killed because he was dancing with Nankya, whom Bwogo is interested in. The newspapers conveniently report that it was a case of the most-wanted criminal. This, like a flood, shows the heightened oppression and terror slapped on the populace.

Innocent people like Kyambade are killed. What do the papers have to report? He is an agitator paid by the guerillas to incite the masses against the government. Nowhere is safe. Men are carelessly arrested of false charges, as is the case with Ssalongo, a humble Christian who is brutally arrested on allegations of carrying out dubious trade with dangerous men. He is later on shot dead, why? He is accused of trying to escape. The inhumane nature of the government knows no bounds. They kill at their convenience. They care less for the human life of the *wananchi*. What could be more terrorising?

The title, *The Floods* brings out a mood of horror and melancholy. The word, "floods" instantly paints in the reader's mind an atmosphere of chaos, fear and morose.

The title is further suitable as it directly aligns itself with one of the playwright's greatest concerns in the play, namely, the theme of political oppression. Like the Biblical floods in Noah's times that destroy life and fill the hearts of men with dread, Boss' government in the play horrifies its citizens with brutality and torture.

WILLIAM WYCHERLEY: THE COUNTRY WIFE

A wife is a married woman considered in relation to her spouse. A country is a place away from the city characterised by simple unsophisticated life. In the play, Margery, the young bride of Pinchwife is the titular country wife. She is naïve and unfamiliar with the way of life in the city. Pinchwife marries her because he believes that she is stupid and easily manipulated. He is terrified that if he marries an intelligent wife she may make him a "cuckold." Pinchwife tells the men that his wife is stupid and plain so that they will not want to seduce her.

The title *The Country Wife* is ironic because contrary to

the reader's and Pinchwife's expectation, Margery is actually intelligent and canny; surprisingly more so than Pinchwife. She outsmarts her husband and escapes from his jealous supervision. She is seduced by Horner and eventually becomes his mistress.

The irony in the title, making it even more suitable, is seen further when during her stay in the city, Margery proves herself to be as intelligent, devious and resourceful as Pinchwife believes town wives to be. She proves that she can think quickly and lie to protect herself. Although Pinchwife believes that Margery is innocent and raw, Margery is a sensual person who is immediately drawn to the good-looking actors at the theatre.

Through the title, Wycherley draws the reader's attention to the theme of town versus country. In *The Country Wife*, Pinchwife, an older man who is terrified of being cheated on and made a "cuckold," marries a young woman, Margery, from the country because he believes that she is less likely to cheat on him than a city wife. This implies that people from the country are simple and uneducated compared with sophisticated and cosmopolitan town dwellers.

More so, the title helps highlight for the reader of the play the real difference between Margery, a woman from the country, and the town ladies, Lady Fidget and Mrs. Squeamish. Unlike the town ladies, Margery does not understand the etiquette or rules of city life. She has no interest in maintaining her reputation as she does not realise that she has one to protect and she does not assume that extramarital love equates to "ruin," as the town ladies do, because she does not understand the town's hypocritical preoccupation with the appearance of "virtue."

Furthermore, the title is suitable as it reflects Margery's character. Throughout the play, Margery grows wily and experienced in the ways of the town. However, she remains an honest character because she does not realise when it is and is not appropriate to lie. She only lies when Pinchwife threatens her or when she is persuaded by the other characters.

YUSUF SERUNKUMA: THE SNAKE FARMERS

A farmer is a person engaged in agriculture, raising living organisms for food or for money. The term may also apply to people who do a combination of raising field crops, orchards, vineyards, poultry or other livestock mainly for lucrative purposes.

In the play, a small village, in an African country called Sahara, is attacked by snakes which kill both people and livestock. The epidemic spurs the concern of missionaries and artists from London. They mobilise resources; both snake-fighting equipment and money, to help fight the snakes. They also carry shoes and clothes for some of the children and village elders. They also set up a hospital to treat the victims of the pandemic.

Unfortunately, the donation becomes an opportunity for the elders of the village to selfishly amass wealth. The more the epidemic keeps around, the wealthier they get. As the epidemic becomes more controlled and the snakes are getting eradicated, they improvise a way to keep the funds coming. They start a snake farm in a secret part of the village from where they release a few snakes every now and then to kill people and livestock so that they can call for more help. These chiefs, so to say, become the "farmers" of the snakes to enable them harvest big yields.

The play, *The Snake Farmers*, highlights the problems that afflict African countries. NGO officials and other persons in positions of responsibility take advantage of outbreaks of diseases like polio and cholera, famines, coups, genocides, cattle rustling and natural disasters to earn big. The title is, therefore, a symbolic as well as a descriptive one that describes, symbolises and mocks such leaders.

The title points to the character of the village chiefs. They are selfish and irresponsible so much so that they create fake crises to ensure that they get money to deal with the problems but, in actual fact, the money only serves their personal projects. They do not care about the poor whose children and livestock are dying of snake bites. In a sense, their greed presents these leaders as snakes feeding on the desperation of their own people.

Furthermore, the title is suitable as it develops what constitutes the core of the play, i.e. the question: What explains the prevalence of fraud in contemporary capitalist societies? Through this question, Yusuf seeks to respond not to a single event, but to a socio-cultural shift. The author's question is based on the observation that fraud, theft, corruption and trickery have become wide spread in contemporary capitalist societies in most businesses and other forms of interactions.

NB: This is only a guide. A candidate may not rely on it as if it were all he/she needed to satisfactorily answer questions. Please let it guide you to generate more material.

LITERATURE IN ENGLISH PAPER ONE QUESTIONS

SECTION I

But I did not want to shoot the elephant. I watched him beating his bunch of grass against his knees, with that preoccupied grandmotherly air that elephants have. It seemed to me that it would be murder to shoot him. At that age I was not squeamish about killing animals, but I had never shot an elephant and never wanted to. (Somehow it always seems worse to kill a large animal.) Besides, there was the beast's owner to be considered. Alive, the elephant was worth at least a hundred pounds; dead, he would only be worth the value of his tusks, five pounds, possibly. But I had got to act quickly. I turned to some experienced-looking Burmans who had been there when we arrived, and asked them how the elephant had been behaving. They all said the same thing: he took no notice of you if you left him alone, but he might charge if you went too close to him.

It was perfectly clear to me what I ought to do. I ought to walk up to within, say, twenty-five yards of the elephant and test his behaviour. If he charged, I could shoot; if he took no notice of me, it would be safe to leave him until the mahout came back. But also I knew that I was going to do no such thing. I was a poor shot with a rifle and the ground was soft mud into which one would sink at every step. If the elephant charged and I missed him, should have about as much chance as a toad under a steam-roller. But even then I was not thinking particularly of my own skin, only of the watchful yellow faces behind. For at that moment, with the crowd watching me, I was not afraid in the ordinary sense, as I would have been if I had been alone. A white man mustn't be frightened in front of "natives"; and so, in general, he isn't frightened. The sole thought in my mind was that if anything went wrong those two thousand Burmans would see me pursued, caught, trampled on and reduced to a grinning corpse like that Indian up the hill. And if that happened it was quite probable that some of them would laugh. That would never do.

There was only one alternative. I shoved the cartridges into the magazine and lay down on the road to get a better aim. The crowd grew very still, and a deep, low, happy sigh as of people who see the theatre curtain go up at last, breathed from innumerable throats. They were going to have their bit of fun after all. The rifle was a beautiful German thing with cross-hair sights. I did not even know that in shooting an elephant one would shoot to cut an imaginary bar running from ear-hole to ear-hole. I ought,

therefore, as the elephant was sideways on, to have aimed straight at his ear-hole, actually I aimed several inches in front of this, thinking the brain would be further forward.

When I pulled the trigger I did not hear the bang or feel the kick – one never does when a shot goes home – but I heard the devilish roar of glee that went up from the crowd. In that instant, in too short a time, one would have thought, even for the bullet to get there, a mysterious, terrible change had come over the elephant. He neither stirred nor fell, but every line of his body had altered. He looked suddenly stricken, shrunken, immensely old, as though the frightful impact of the bullet had paralysed him without knocking him down. At last, after what seemed a long time – it might have been five seconds, I dare say – he sagged flabbily to his knees. His mouth slobbered. An enormous senility seemed to have settled upon him. One could have imagined him thousands of years old. I fired again into the same spot. At the second shot he did not collapse but climbed with desperate slowness to his feet and stood weakly upright, with legs sagging and head drooping. I fired a third time. That was the shot that did for him. You could see the agony of it jolt his whole body and knock the last remnant of strength from his legs. But in falling he seemed for a moment to rise, for as his hind legs collapsed beneath him he seemed to tower upward like a huge rock toppling, his trunk reaching skyward like a tree. He trumpeted, for the first and only time. And then down he came, his belly towards me, with a crash that seemed to shake the ground even where I lay.

I got up. The Burmans were already racing past me across the mud. It was obvious that the elephant would never rise again, but he was not dead. He was breathing very rhythmically with long rattling gasps, his great mound of a side painfully rising and falling. His mouth was wide open – I could see far down into caverns of pale pink throat. I waited a long time for him to die, but his breathing did not weaken. Finally, I fired my two remaining shots into the spot where I thought his heart must be. The thick blood welled out of him like red velvet, but still he did not die. His body did not even jerk when the shots hit him, the tortured breathing continued without a pause. He was dying, very slowly and in great agony, but in some world remote from me where not even a bullet could damage him further. I felt that I had got to put an end to that dreadful noise. It seemed dreadful to see the great beast lying there, powerless to move and yet powerless to die, and not even to be able to finish him. I sent back for my small rifle and

poured shot after shot into his heart and down his throat. They seemed to make no impression. The tortured gasps continued as steadily as the ticking of a clock.

In the end, I could not stand it any longer and went away.

Questions:

- Suggest a suitable title to the passage.
- What does the writer mean by the following statements?
 - ...with that preoccupied grandmotherly air that elephants have.
 - ...as much chance as a toad under a steam-roller.
 - ...powerless to move and yet powerless to die.
- Explain the conflicts that go on in the mind of the writer according to the passage.
- Suggest reasons why the writer hesitates killing the elephant and why he suddenly decides to shoot.
- Explain the meaning of the following words and phrases as used in the passage;
 - squeamish
 - charged
 - a poor shot with a rifle
 - would see me pursued, caught, trampled on
 - sagged flabbily
 - slobbered
 - remnant of strength
 - long rattling gasps
 - great mound
 - tortured breathing

SECTION II

2. Read the following passage and answer the questions that follow:

Knowing that Mrs. Mallard was afflicted with heart trouble, great care was taken to break to her as gently as possible the news of her husband's death.

It was her sister Josephine who told her, in broken sentences, veiled hints that revealed in half concealing. Her husband's friend Richards was there, too, near her. It was he who had been in the newspaper office when intelligence of the railroad disaster was received, with Brently Mallard's name leading the list of "killed". He had taken time to assure himself of its truth by a second telegram, and had hastened to forestall any less careful, less tender friend in bearing the sad message.



She did not hear the story as many women have heard the same, with a paralysed inability to accept its significance. She wept at once, with sudden, wild abandonment, in her sister's arms. When the storm of grief had spent itself she went to her room alone. She would have no one follow her.

There stood, facing the open window, a comfortable, roomy armchair. Into this she sank, pressed down by a physical exhaustion that haunted her body and seemed to reach her soul.

She could see in the open square before her house the tops of trees that were all aquiver with the new spring life. The delicious breath of rain was in the air. In the street below a peddler was crying his wares. The note of a distant song which someone was singing reached her; and countless sparrows were twittering in the eaves.

There were patches of blue sky showing here and there through the clouds that had met and piled above the other in the west facing her window. She sat with her head thrown back upon the cushion of the chair quite motionless, except when a sob came up into her throat and shook her, as a child who has cried itself to sleep continues to sob in its dreams.

She was young, with a fair, calm face, whose lines bespoke repression and even a certain strength. But now there was a dull stare in her eyes, whose gaze was fixed away off yonder on one of those patches of blue sky. It was not a glance of reflection, but rather indicated a suspension of intelligent thought.

There was something coming to her and she was waiting for it, fearfully. What was it? She did not know; it was too subtle and elusive to name. But she felt it, creeping out of the sky, reaching toward her through the sounds, scents, the colour that filled the air.

Now her bosom rose and fell tumultuously. She was beginning to recognise this thing that was approaching to possess her, and she was striving to beat it back with her will – as powerless as her two white slender hands would have been.

When she abandoned herself, a little whispered word escaped her slightly parted lips. She said it over and over under her breath: "Free, free, free!" The vacant stare and the look of terror that had followed it went from her eyes. They stayed keen and bright. Her pulses beat fast, and the coursing blood warmed and relaxed every inch of her body.

She did not stop to ask if it was not a monstrous joy that held her. A clear and exalted perception enabled her to dismiss the suggestion as trivial.

She knew that she would weep again when she saw the kind,

tender hands folded in death; the face that had never looked save with love upon her, fixed and gray and dead. But she saw beyond that bitter moment a long procession of years to come that would belong to her absolutely. And she opened and spread her arms out to them in welcome.

There would be no one to live for during those coming years; she would live for herself. There would be no powerful will-bending her in that blind persistence with which men and women believe they have a right to impose a private will upon a fellow creature. A kind intention or cruel intention made the act seem no less a crime as she looked upon it in that brief moment of illumination.

And yet she had loved him – sometimes. Often she had not. What did it matter? What could love, the unsolved mystery, count for in the face of this possession of self-assertion which she suddenly recognised as the strongest impulse of being!

"Free Body and Soul free!" she kept whispering.

Josephine was kneeling before the closed door with her lips to the keyhole, imploring for admission. "Louise open the door! I beg you open the door – you will make yourself ill. What are you doing, Louise? For heaven's sake open the door."

"Go away. I am not making myself ill". No; she was drinking in every elixir of life through that open window.

Her fancy was running riot along those days ahead of her. Spring days, and summer days, and all sorts of days that would be her own. She breathed a quick prayer that life might be long. It was only yesterday that she had thought with a shudder that life might long.

She rose at length and opened the door to her sister's importunities. There was a feverish triumph in her eyes, and she carried herself unwittingly like a goddess of victory. She clasped her sister's waist, and together they descended the stairs. Richard stood waiting for them at the bottom.

Someone was opening the door with a latchkey. It was Brently Mallard who entered, a little travel-stained, composedly carrying his grip-sack and umbrella. He had been far from the scene of accident, and did not even know that there had been one. He stood amazed at Josephine's piercing cry; at Richard's quick motion to screen him from the view of his wife.

But it was too late.

When the doctors came they said she had died of heart disease – of joy that kills.

Kate Chopin

Questions:

- Who is the narrator in the story?
- What news does Josephine bring to Mrs. Mallard?
 - How does Mrs. Mallard respond to the news?
- Clearly show how irony is effectively used in the story.
- Identify any four other devices used in the passage, showing how effectively they have been employed.

SECTION III

3. Read the poem below and answer the questions that follow.

She

When God first launched the universe and man
Majestic and final seemed this handiwork;
And yet in a corner of his mind there waited
A pre-ordained surprise as concluding delight.

It's not fair, reasoned He, for man to be alone,
While beasts, fish, fowl and smallest insects
Have each a fitting consort of its own kind –
For man let me fashion a commensurate spouse.

From his head or foot let me not scoop her,
Lest his commander or slave she grows to be,
But from the rib next to his priceless heart,
That in all things she may prove his compeer.

Let me mould her, said the Lord of Beginnings,
With delicate contours from top to toe;
Let her be slim, but broad her pelvic cradle –
To contain singles, twins, and all mankind ...

Timothy Wangusa

- How relevant is the title to the subject matter of the poem?
- Give a clear interpretation of the meaning of the poem.
- What is the poet's intention?
- Show how any four devices have been employed in the poem.
- Comment on the following in the poem.
 - Tone
 - Mood
 - Attitude

ECONOMICS PAPER TWO ANSWERS (AEC0006)



AEC006 ANSWERS CONTINUED

- Justification for allocating a lot of funds to infrastructure development include:
 - To promote savings. Financial infrastructure like banks and insurance guarantee safety of clients' deposits and thus encouraging the public to saving.
 - To promote investment/capital inflow. Well-developed infrastructure like roads, banks e.t.c reduce the cost of doing business and this attracts more investments.
 - To facilitate optimum/increased utilisation of idle resources. Infrastructure such as power promote production in the form of running the machines.
 - To promote trade/accessibility to markets. Well-developed transport and communication infrastructure promotes arbitrage due to reduced costs incurred.
 - To increase productivity/growth of GDP. Investment in education and health infrastructure e.g. universities, schools, hospitals etc increases the skills and livelihood of labour through training thus increased efficiency.
 - To generate government revenue. Government taxes the profits of various institutions in the infrastructural sector.
 - To encourage provision of more employment opportunities. People are hired to work in schools, banks, health centres and theatres to sustain their welfare.
 - To improve social welfare of the people e.g. hospitals provide vaccination services against killer diseases.
 - To promote industrial development. The existence of various infrastructure like roads encourage production of more goods and services.
 - For promotion of agricultural development. Agricultural research centres help in developing drought and disease-resistant crop varieties.
 - To facilitate innovations and inventions. Modern machines like tractors are acquired to assist in infrastructure development, hence technological transfer.
 - To reduce inflation. Roads assist in supplying different goods to different areas of scarcity.
 - For promoting entrepreneurial skills. The presence of

ECONOMICS TEACHERS



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- infrastructure encourages investment.
- To increase foreign exchange earnings. Some industries produce goods for export, thus earning forex and improving the balance of payment.
- To enable mobility of factors of production. By using the various forms of transport, labour is able to change location and occupation.
- To reduce conservatism. Through communication infrastructure like radios, people are educated about modern methods of production.
- For diversification. Infrastructure widens the scope of economic activities through research and development.

NOTE: State your points by giving the underlying considerations for providing more funds to infrastructure development in our budget. Explain by showing how the factor stated has been or is promoted by existence of better infrastructure.

- Problems/challenges faced in developing/providing infrastructure in Uganda
 - Limited funds/inadequate funding.
 - Physical barriers like mountains, lakes , valleys, which

- makes infrastructure growth costly.
- Limited resources to attract infrastructure development.
- Limited skills for planning and infrastructure growth.
- Poor land tenure system/limited public land which increases the costs of infrastructure growth e.g. compensation costs are very high.
- Insecurity in some parts of the country.
- Limited investment incentives offered by government.
- Political interference in infrastructure development.
- Poor entrepreneurial skills.
- Over ambitious planning for infrastructure growth.
- Limited market, especially for industrial output.
- High rates of inflation which make implementation of infrastructure growth plans expensive.
- Poor state of technology
- Low level of accountability/high level of corruption leading to diversion of funds meant for infrastructure.
- High rates of interest on loans.
- High degree of conservatism/rigidity/cultural hostility.
- High dependence on aid for infrastructure development which is inadequate, unreliable and tied.

NOTE: State by giving the challenges that have hindered growth of infrastructure in Uganda. In your explanation, show how the stated factor hinders infrastructure development in Uganda.

- The credit creation process in a uni bank system is as follows:
 - A commercial bank creates credit by receiving deposits and lending part of it (excess funds).
 - Receiving of deposits by a commercial bank that is shs 1,000,000.
 - Keeping of a percentage of the deposit as cash ratio that is 20%.
 - Lending out the balance after removing the cash ratio to credit worthy borrowers that is 80%.
 - The process of receipt and lending is shown in the table below.

From page III

Branches of the bank.	New deposit (shs)	Cash ratio 20% (shs)	New loans (shs)
A	1,000,000	200,000	800,000
B	800,000	160,000	640,000
C	640,000	128,000	512,000
:	:	:	:
:	:	:	:
nth branch	:	:	:
Total			

vi) The process continues till the initial deposit defuses in the system.

vii) At the end of the process,

$$\text{Total credit created} = \text{initial deposit} \times \text{credit multiplier} \text{ or } \frac{1}{CR}$$

$$\begin{aligned} \text{viii) Total deposit created} &= 1,000,000 \times \frac{1}{20\%} \\ &= 1,000,000 \times \frac{100}{20} \\ &= 5,000,000 \end{aligned}$$

b) Factors that have favoured the credit creation process include the following:

- Increase in the number of creditworthy borrowers/customers has prompted banks to lend out money.
- Reduction in the size of the cash ratio has increased the amount of funds available for lending.
- Increase in the number of people who have the ability to raise the collateral security. This has made commercial banks get assurance of recovering the funds lent out.
- Reduction in the interest rates on loans has encouraged more borrowing because the loans are affordable.
- Increase in the level of accountability has led to growth and development of commercial banks, putting them in a better position to create more credit.
- Reduction in the level of liquidity preference has availed more funds in banks for lending, leading to an increase in the level of credit creation.
- Increased knowledge about services offered by commercial banks has led to increased savings and borrowing, leading to increased level of credit creation.
- Increase in the popularity of loans among the people.
- Increase in the level of investment increases effective use of commercial banks and demand for loan.

- Improvement in economic certainty/economic climate. This has encouraged people to borrow and invest.
- Improvement in the political atmosphere has encouraged investment due to confidence about profitability prompting commercial banks to give out loans, hence leading to an increase in credit creation.
- Expansionary monetary policy by the central bank e.g. lowering bankrates and buying back government bonds. This has led to an increase in credit creation as more money is available for lending.
- Increase in the size of bank deposits/increase in the level of savings has availed larger sums of money for banks to lend.
- Increase in number and distribution of commercial banks has reduced competition among commercial banks for customers, resulting in an increase in the level of credit creation.
- Increase in income of the population has encouraged more savings, leading to an increase in credit creation.
- Reduction in the size of the subsistence sector/increase in the level of monetisation of the economy. This has increased demand for loanable funds as people use money as a medium of exchange, hence leading to an increase in the level of credit creation.

ECONOMICS PAPER ONE ANSWERS (AEC0007)

SECTION A

1. a) i) **A change in demand** refers to an economic situation where more or less units of a commodity are demanded at a constant price brought about by a change in other factors affecting demand for that particular commodity.

OR Change in demand refers to an increase or decrease in demand for a given product brought about by changes in other factors affecting demand for it except its price/when the price is constant.

ii. **The factors that cause a change in demand for a commodity include;**

- A change in prices of its substitutes.
- A change in prices of its complements.
- A change in the level of consumers' income.
- A change in the population size.
- Expectation of a future change in the price of the commodity.
- A change in government policy of taxation and subsidisation.
- A change in the level of advertisement for that commodity.
- A change in season for the commodity.
- A change in tastes and preferences towards the commodity.
- A change in the quality of the commodity.
- A change in the economic conditions.
- A change in the nature of distribution of income in an economy.

NOTE: The factors that cause a change in demand are generated from the determinants of demand other than the commodity's own price. Words that can be used when stating the point include: Change in, shift in, variations in ... Avoid words like high/low in your explanation. Use words like increase, rise, decrease, decline, fall, etc.

b) i) **Collusion Oligopoly** is a situation where oligopoly firms enter into a cartel arrangement of independent producers that determines the output supplied on market and the price e.g. OPEC.

ii) **The demerits of collusive oligopoly include:**

- There is limited employment creation due to existence of a few firms, and restricted entry of new firms.
- It leads to limited entrepreneurial development/limited investment due to restricted entry for new firms.
- Strong cartels exert pressure on government, hence become a tool of political agitation.
- It leads to underutilisation of available resources due to operation at excess capacity.
- It leads to production of limited variety of goods due to the supply quotas imposed on firms by the cartel.
- It leads to exploitation of consumers through overcharging due to collusion of firms.
- It leads high costs of production due to intensive sales promotional activities/high prices of the final products due to high costs of non-price competition.
- Leads to duplication due to production of similar products.
- It worsens the problem of income inequality in an economy due to supernormal profits enjoyed by the oligopoly firms under collusion.
- It leads to collapse of small firms due stiff competition.
- It distorts consumer choices due to widespread persuasive advertising for the products.

c) i) **Consumption expenditure** refers to the total expenditure on goods and services which provide utility in the current period, while **investment expenditure** refers to

the total expenditure on capital goods/assets that are used to produce other goods and services.

ii) **Factors that influence the level of consumption in an economy.**

- Size of the market/size of the population.
- Level of speculation by consumers.
- The degree of advertisement for the commodities.
- The level of income distribution.
- Time preference.
- Level of disposable income.
- Availability of credit to consumers.
- Levels of prices.
- Government policy on taxation and subsidisation.

d) **The features of Rostow's pre-conditions to take-off stage/transitional stage include;**

- Existence of dualism, that is the economy develops two sectors — the subsistence and modern sector, but the subsistence sector still dominates the modern sector.
- Foreign trade emerges, that is, involvement in foreign transactions begins.
- Removal of obstacles which hinder economic growth. Society breaks the ties of traditional sector, which is small and uses labour intensive techniques.
- Beginning of the application of modern science to agriculture, that is, adoption of better and efficient methods of production.
- Development of various sectors begins.
- Improvement of the social and economic infrastructure.
- The economy becomes open i.e. the foreign sector emerges, but on a small scale.
- Emergence of investors/entrepreneurs who are prepared to give financial support to new ideas.
- Reduction of illiteracy rate as there is increased investment in formal education.
- Industrialisation begins to take root
- Increase in saving constituting 5% of National Income or Gross Domestic Product.
- Increase in investment constituting 5% of National Income or Gross Domestic Product.

e) **A regressive tax** is one whose rate falls/reduces as the taxpayer's income increases i.e. it takes a higher proportion of income of low income earners than high income earners, while/whereas a **proportional tax** is one whose rate remains constant for all income levels.

ii) **The demerits of a regressive tax include the following;**

- It widens the income gap between the rich and the poor.
- It limits consumption of mass consumer goods/it reduces the standards of living among the poor.
- Low revenue is realised by the government.
- It discourages savings and investments among the low income earners (poor).
- It leads to social unrest/political discontent.
- It encourages tax evasion and avoidance among the poor.

SECTION B

2. a) **Factors that affect the effectiveness of economic development planning in an economy.**

- Availability of funds from within and abroad makes the implementation of plans much easier.

- Availability of statistical data/information on population and growth rates makes implementation of plans faster as sound targets are set, while limited information means unrealistic targets and objectives.
- The political climate. Political stability provides a conducive climate for plan implementation since facilities are safely kept, hence facilitating successful plan implementation while political instabilities destroy facilities for plan implementation.
- Availability of skilled manpower simplifies plan implementation while limited skilled labour limits plan implementation since it is difficult to identify viable projects.
- The level of external/foreign influence. A high level of external influence impedes implementation of plans since approvals and funding come from donors, while a low level of external influence eliminates bureaucracy.
- The economic climate/rate of inflation. A high rate of inflation limits successful implementation of plans since the money value keeps fluctuating.
- The rate of corruption. High rates of corruption by the plan implementers leave insufficient resources for establishment of projects while a high degree of accountability ensures success of plan implementation.
- Level of development of infrastructure. Well-developed infrastructure facilitates easy and cheaper movement of resources and manpower for plan implementation.
- Natural factors. Conducive natural factors like good climate make it easy to realise the plan objectives, especially in the agricultural sector while occurrence of natural hazards like drought disrupt the process.
- Will by the people and government. High degree of will by the people and the government make plan implementation successful since the masses easily rally behind the government to support the process while limited will by the people and government leads to resistance towards plan implementation, thus failure.
- Degree of interference by politicians. A high degree of interference by politicians limits implementation of plans because they may divert resources to other projects or areas that suit their private and political interests.
- The degree of responsiveness of the private sector. Some of the plans made by the central authority are indicative. Government provides inducements, such as tax incentives to the firms to invest in particular sectors, but because private sectors are not under direct control of government and are profit-driven, they may not respond to the inducements, hence failure of indicative plans. Plan implementation is successful where private sector firms respond positively to government inducements.
- The degree of ambitiousness of planning. Some plans require more resources than those that can be sourced both locally and abroad, hence failure of plan implementation while plans that require minimal resources become easier to implement hence success of plan implementation.

NOTE: The question is neutral and so should the answers. Clearly show how the point either leads to successful plan implementation or inhibits the effective plan implementation.

(b) Benefits of economic development planning in an economy.

- Enables proper allocation of scarce resources.
- Facilitates equitable distribution of incomes through the use of measures such as progressive taxation, subsidisation of the poor under development planning.
- Corrects the deficiencies of price mechanism, especially during periods of rapid structural changes. Price mechanism does not adequately provide for social and economic infrastructure which requires huge capital investment, emergencies like floods, harmonious development of all the sectors, hence a need for planning.
- Helps to solve the unemployment problem through stimulating private and public investment.
- Used in soliciting for foreign aid. Government uses it to show potential donors planned revenue and expenditure to get them to close the budgetary deficits.
- Helps to relate present activities to future activities. Planning makes sequencing of projects possible.
- Enables harmonious and consistent use of resources. Planning leads to harmonious and consistent use of resources by avoiding duplication of projects.
- Rallies public co-operation in the development process, hence winning political support.
- Aids in maintaining price stability by influencing production levels. In times of inflation, measures such as reducing government planned expenditure, increasing direct taxes to reduce aggregate demand and measures to stimulate production and aggregate supply are undertaken. All done through planning.
- Helps to correct balance of payments problems. Planning enables government to undertake strategies that aim at improving the country's earnings abroad.
- Helps in determining the rate of economic growth and development. Planning enables government to set growth targets and carryout measures of achieving them.
- Helps to reduce economic dependence/promotes self-reliance. Planning reduces dependence on external resources by raising revenue locally, say through import substitution industrialisation.
- Enables identification of areas suitable for public and private investment. Planning enables government to identify sectors which are highly profitable and attractive to private investors for a country's development.

3 a) **Multinational corporations** are international companies which have their headquarters in one country, but with a number of affiliate branches and areas of operation in other countries; in both developed and developing countries. Examples are: Coca-Cola, Caltex, Shell, MTN etc.

b) Implications of multinational corporations;

Positive implications

- They are a source of government revenue through taxes.
- They encourage the development of infrastructure as government is induced to develop roads.
- They create employment opportunities in the country.
- They promote international co-operation.
- They promote development of local labour skills.
- They help to close the savings-investment gap. Multinational corporations bring in foreign capital to fund their activities.
- They close the foreign exchange gap.
- Production of variety of goods and services.
- They close technological gap/it is a means technological transfer. They bring better techniques of production.
- Increased output, hence economic growth.
- They promote efficiency of local firms leading to quality due to competition.
- Encourage increased utilisation of the available resources.
- Promote high quality goods and services due to competition.
- Help in closing the manpower gap by hiring expatriates.

Negative implications:

- They accelerate capital outflows in form of profit repatriation, which worsens BOP position.
- They worsen income disparities by providing more incomes to the foreign owners.
- They promote external dependence of the economy.
- Local firms may be outcompeted.
- They give rise to technological unemployment.
- There is irrational use of resources due to over-exploitation which leads to quick depletion.
- They breed foreign domination. They always demand excess concessions, such as tax holidays, etc.
- They result in environmental hazards like air and water pollution due dumping of industrial wastes.
- They cause regional imbalances in development because prefer to locate their industries in urban areas.
- They promote rural-urban migration.
- They are associated with erosion of cultural values due to the transfer of Western values by expatriates.

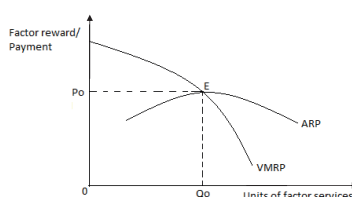
4 a) Role of education in the development of an economy

- Promotes the development of skills and knowledge.
- It facilitates innovations and inventions through research.
- It enables creation of more employment opportunities.
- It controls the population growth rate as more time spent in school reduces early marriages.
- It reduces conservatism among people. This is by promoting literacy which reduces backward attitudes.
- It facilitates easy implementation of government policies.
- It reduces government expenditure on hiring expatriates.
- It encourages industrial development. The skilled labour like mechanical engineers are hired in industries.
- It facilitates rural transformation by setting up schools in rural areas, sending agricultural officers to rural areas to teach rural farmers modern farming methods.
- The education sector creates linkages with other sectors. E.g. industries are established to produce goods needed in education institutions like books, etc.
- It is a source of revenue to government through taxing the private education institutions and employee salaries.
- It promotes international relations due to educational exchange programs with other countries.
- It encourages the development of infrastructure. The education institutions have to be connected to well-developed roads, telephone facilities, water supply, etc.
- It accelerates economic growth/GDP.

NOTE: For questions on the role that involve the words **EXPLAIN**, **WHAT IS** and **DISCUSS** the role...., Give only positive role.

5 a) **Marginal productivity theory of distribution** states that a **factor of production** should be paid a **reward** which is equal to the monetary value of its marginal (physical) product **OR** It states that a factor should be paid a price equivalent to the marginal revenue product.

Illustration of the marginal productivity theory of distribution



Where;

ARP is average revenue product.

VMRP is value of marginal revenue product.

OQo units of factor service employed.

OPo is the factor price.

From the diagram above, the factor price is determined at a point E where $ARP = MRP$. Thus each factor service is paid OPo price for OQo units of output.

Assumptions of the theory are; (Though not asked)

- It assumes that all units of factors of production are homogeneous.
- Output can be quantified into measurable units.
- It assumes that the marginal product of a factor of production can be calculated.
- It assumes fair and perfect mobility of factors of production.
- It assumes full employment of factors of production.
- It assumes perfect knowledge in the factor market.
- It assumes no government intervention in determination of factor rewards.
- It assumes operation of the law of diminishing returns.
- It assumes perfect competition in the factor market.
- It assumes a long run situation.
- The theory assumes that firms aim at profit maximisation

b) **To what extent is the marginal productivity theory of distribution relevant to LDCs?**

To a larger extent, the theory is inapplicable/irrelevant because of the following criticisms.

- The assumption that all units of a service are homogeneous is unrealistic. Fertility of land, for example, differs from one piece of land to another. Likewise, labour efficiency differs from worker to worker.
- Factors are not perfectly mobile between different employments. In reality, factors are mainly immobile.
- Perfect competition does not exist in true market situation. I.e. it does not exist in the factor and product markets. Factors are exploited by paying them lower than their marginal productivity.
- Factors of production are not fully employed as assumed by the theory. There are cases of unemployment and underemployment of factors of production.
- The assumption that factor units are divisible and, therefore, can be increased by small quantities does

hold true. Some factor units are not divisible.

- The theory states that the entrepreneurs are motivated by profit maximisation. This is not true because some entrepreneurs are motivated by other factors.
- Production is not a result of one factor alone hence difficulty in determining the contribution of each factor to marginal output.
- Assumes the law of diminishing returns which is unrealistic, especially with improved technology.
- The value of marginal product is not necessarily equal to the value of factor units used in producing it, but determined by other factors like forces of demand and supply.
- Government legislation of factor prices is not taken into consideration by the theory.
- It ignores the fact that factor rewards can be bargained for such as the wage rate for labour.
- It ignores the effects of historical factors in determining factor rewards, e.g. the inherited wage/salary structure. To a minor extent, the theory can be applicable:
- The payment to a factor according to the value of its marginal product can be used where output can be quantified.
- Some factor inputs tend to be relatively homogeneous e.g.. unskilled labour, farm land and money capital.
- Technology in many developing countries has tended to be rudimentary, therefore, the theory can be applicable.
- The government has no influence over factor rewards in the private sector.

6 a) **Full employment** is a situation in which everyone who is capable of work at the prevailing wage rate is capable of getting a job **OR** Is a situation in which the rate of unemployment in an economy is less than 5% of labour force **OR** It is an economic situation in which productive resources are fully utilised, while **under-employment** refers to a state of underutilisation of labour. **OR** It is that situation where labour force works for less than the prescribed hours of work per day or per week or per month.

NOTE: It should be noted that **full employment** is not the same as **zero unemployment** because in the real world it is not possible to employ all the labour force at a given time.

b) **It is difficult to attain full employment because:**

- Poor education system/poor manpower planning. Labour supply exceeds its demand, making it hard to attain full employment.
- Technological development/substitution of labour with machines.
- Poor land tenure system. There is limited access to more land to expand investments leading to low job creation.
- Discrimination in the labour market on the basis of race, ethnicity, religion, nationality political affiliation etc.
- Unfavourable climatic seasons.
- High population growth rate, which causes excess labour relative to demand for labour.
- Rural-urban migration, flooding urban centres with more job seekers than the available job vacancies.
- Physical and mental incapacitation. Some Individuals who have physical impairment are considered less efficient and are not hired by employers.
- Limited capital. Investors fail to acquire the inputs for use in production. This leads to low levels of investment, thus low job creation.
- Limited investment incentives increase production costs, leading to low levels of investment this few jobs created.
- Small market size/low aggregate demand. This results in low sales, limiting expansion of firms, thus fewer jobs.
- The retrenchment policy. This involves laying off some civil servants to reduce government expenditure.
- Break-down of the production process. Fewer people are employed and this increases the number of job seekers.
- Under developed infrastructure increase costs of production and low profit margins, leading to low investment, thus few jobs created.
- Limited entrepreneurial skills. There is inefficiency due to poor organisation of factors of production. This limits expansion of firms and fewer jobs are created.
- The large subsistence sector. There is low drive to produce commodities for sale and this limits investment.
- Low level of accountability. Funds meant for job creation are diverted for personal gains.
- Political instability. Investors fear for their lives and property which limits expansion of firms to create more jobs.

NOTE: Reasons why it is difficult to attain full employment level in an economy are the same as causes of unemployment.

7 a) **There are two forms of government expenditure:**

- **Recurrent/consumption/operating expenditure** is the day-to-day spending of government aimed at maintaining

From page V

existing capacities for example payment of wages to civil servants, rent, interest on the national debt and periodic contributions to international organisations.

- **Development/capital expenditure** is the expenditure by the government on the establishment of projects for purposes of both expanding existing capacities and creating new ones to generate more goods and services, for example, expenditure on setting up medical centres, schools, roads and other forms of infrastructure.

b) Measures that may be taken to regulate public expenditure in an economy.

- Encourage cost-sharing in the provision of services i.e. sharing of costs between government and beneficiaries.
- Improve and maintain the political stability in all areas. This can help to reduce government expenditure on defence.
- Power should be decentralised so that local authorities like districts can devise sources to finance their areas.
- Undertake further privatisation of state enterprises.
- Fight corruption in state departments.
- Increase non-tax sources of revenue other than borrowing e.g. market dues, special assessment, etc.
- Restructure and rationalise foreign missions and other government commitments.
- Control population growth rate through encouraging use of planning methods.
- Avoid dead weight debts. Debts that do not help to generate more income for the government should be avoided.
- Retrench the public service/reduce administrative costs.
- Liberalise the economy further. Government should continue removing unnecessary restrictions on production and trade to attract more investors.
- Widen taxbases, especially through supporting diversification of the economy.
- Improve on tax collection to minimise budget deficits.

NOTE: The question requires answers to be presented in a speculative/suggestive tense/language. Regulating public expenditure involves government finding ways of cutting costs/reducing expenses as well as raising more revenue (reducing budgetary deficits). Show those aspects clearly in your explanation.

ECONOMICS P.2 (AEC0008)

SECTION A

- (a) (i) Define the term wealth.
(ii) Mention three merits of social wealth in Uganda.
- (b) (i) Distinguish between industrial inertia and footloose industries.
(ii) State two positive implications industrial inertia in Uganda.
- (c) (i) Distinguish between a customs union and a common market.
(ii) State two limitations to the effective operation of the East African Community.
- (d) (i) Define supply price.
(ii) Given that the supply price of a factor is Shs. 350,000. Given that its economic rent is a half of the supply price. Calculate its market price.
- (e) (i) Distinguish between liquidity preference and liquidity ratio.
(ii) Give any two reasons for the high liquidity preference in Uganda.

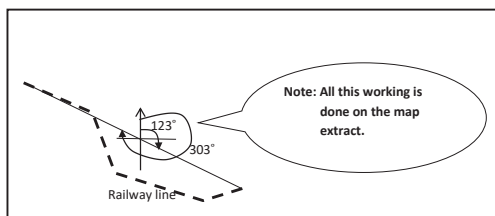
SECTION: B

- (a) Differentiate between Elasticity of labour supply and elasticity of demand of labour.
(b) What factors have affected the rate of increase in supply of labour in Uganda?
- (a) Why have monopoly tendencies increased in Uganda.
(b) Explain the measures that have been taken to control monopoly tendencies in Uganda.
- (a) Describe the objectives of the monetary policy in Uganda.
(b) What factors have favoured the successful implementation of the monetary policy in Uganda?
- (a) Explain the reasons for the existence of private sector in Uganda.
(b) Discuss the measures that can be taken to improve the performance of the private sector in Uganda.
- (a) Distinguish between agricultural modernisation and agricultural transformation.
(b) Examine the factors that limit modernisation of agriculture in Uganda.
- (a) Why did the minister of Finance present an unbalanced budget for the next financial year 2020/2021?
(b) Suggest measures of reducing deficits in Uganda's national budget.

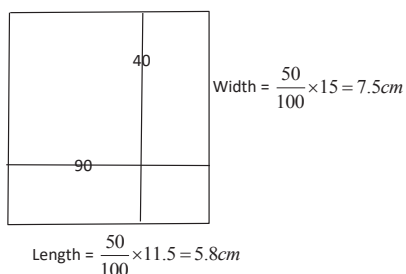
GEOGRAPHY ONE SOLUTIONS (AGE0006)

Mapwork

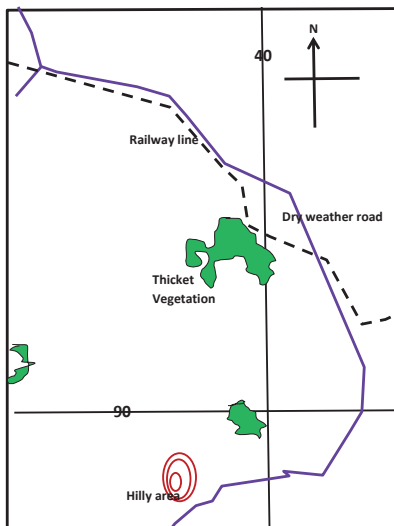
- a) Grid reference of the; i) Dam near OPIT- 423892
ii) Feature found at grid reference 409973:- Air Photo Principal Point sortie NO. 064.
 - b) i) Direction of flow of river Otwala: Flows from South East to North West direction.
(ii) Bearing is 270°
(iii) The railway line trends from 123° to 303° (We accept ± 2°)



c) Sketch



A REDUCED MAP OF KIJURA BY 50% SHOWING; THE RAILWAY LINE, DRY WEATHER ROAD, THICKET VEGETATION AND HILLY AREA.



$$\begin{aligned} \text{d)} &= \text{original scale} \times \text{scale factor} \\ &= 1 : 50,000 \times 50\% \\ &= \frac{1}{50,000} \times \frac{50}{100} \\ &= \frac{50}{50,000,000} \\ &= 1 : 1,000,000 \end{aligned}$$

- Relationship between settlement and transport:
There is linear settlement along the dry weather road and railway line in the west near OPIT for easy access of transport services.
There is sparse settlement on the western part due to absence of well-developed roads.
- Reasons for the land use types in the area shown on the map:
Trade and commerce in the grid square 4189 due to dense population, well-developed transport network for transporting goods.
Wildlife conservation and Tourism due to

GEOGRAPHY TEACHERS



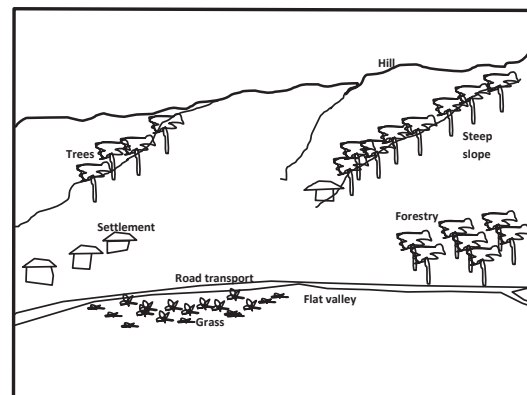
OSBERT RUTAGANDARA
TEACHER AND AUTHOR



TOM KIBIRANGO,
ST CATHERINE SS, BUJUUKO

presence of a Forest Reserve (FR) in the grid square 4289 and well-developed transport network to ease movement of tourists. Transport and communication due to presence a railway line and a dry weather road in the eastern and central part. The area is generally flat which supported the construction of the communication lines. Fishing due to presence of rivers such as; Otwala, Laminamak, Lokome.

- a) A LANDSCAPE SKETCH OF THE AREA SHOWN ON THE PHOTOGRAPH SHOWING: THREE PHYSIOGRAPHIC REGIONS, TWO LAND USE TYPES AND TWO VEGETATION TYPES



- Relationship between land use types and relief in the area shown in the photograph.
q There is forestry in the right middle ground within the foot hills due to presence of fertile soil eroded from above.
q There is transport and communication in the broad flat valley within the fore ground.
q There is settlement within the foot hills in the left middle ground.
q There is no settlement with in the steep slopes due to difficulty to move construction materials and increased soil erosion.
q There is crop growing with in the foot hills and gentle slopes. This is carried out on terraced land.
- Problems facing land use types shown in the photograph.**
q Soil erosion which reduces the fertility of the soil due to steep gradient.
q Landslides due to heavy rainfall and steep gradient.
q Insecurity affecting settlement due to remoteness.
q Dusty road because the road is not of tarmac, the road also becomes impassable during the rainy season.
q Difficulty of transport and communication due to hilly relief.
- Solution to problems facing land use:**
q Planting of trees on steep slopes is being done to control soil erosion and landslides.
q Terracing of land is being done to control soil erosion.
q Construction of a winding road is done to improve on transport and communication.



e) The photograph could have been taken from Kisoro district in southwestern Uganda due to presence of rolling hills in the area.

SECTION B:

3. The plate tectonic theory in relation to landform development.

Developed from the 1950s through the 1970s, plate tectonics is the modern version of continental drift, a theory first proposed by scientist Alfred Wegener in 1912. Wegener did not have an explanation for how continents could move around the planet, but researchers do now. Plate tectonics is the unifying theory of geology, said Nicholas van der Elst, a seismologist at Columbia University's Lamont-Doherty Earth Observatory in Palisades, New York.

Tectonic theories attempt to explain why mountains, earthquakes, and volcanoes occur where they do, the ages of deformational events, and the ages and shapes of continents and ocean basins.

The driving force behind plate tectonics is convection in the mantle. Hot material near the Earth's core rises and colder mantle rock sinks. "It's kind of like a pot boiling on a stove," Van der Elst said. The convection drive plates tectonics through a combination of pushing and spreading apart at mid-ocean ridges and pulling and sinking downward at subduction zones, researchers think. Scientists continue to study and debate the mechanisms that move the plates.

Plates are composed of lithosphere, about 100 km thick, which "float" on the flexible asthenosphere. While the continents do, indeed, appear to drift, they do so only because they are part of larger plates that float and move horizontally on the upper mantle asthenosphere. The plates behave as rigid bodies with some ability to flex, but deformation occurs mainly along the boundaries between plates.

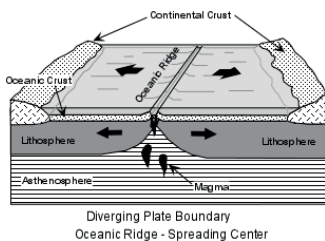
There are three types of plate boundaries:

q Divergent Plate boundaries, where plates move away from each other.

q Convergent Plate Boundaries, where plates move toward each other.

q Transform Plate Boundaries, where plates slide past one another.

Divergent Plate Boundaries. These are oceanic ridges, where new oceanic lithosphere is created by upwelling mantle that melts, resulting in basaltic magmas which intrude and erupt at the oceanic ridge to create new oceanic lithosphere and crust. As new oceanic lithosphere is created, it is pushed aside in opposite directions. Thus, the age of the oceanic crust becomes progressively older in both directions away from the ridge.

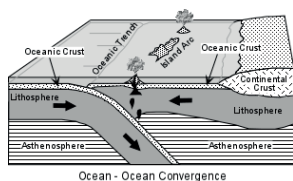


Convergent Plate Boundaries

When a plate of dense oceanic lithosphere moving in one direction collides with a plate moving in the opposite direction, one of the plates subducts beneath the other. Where this occurs an oceanic trench forms on the sea floor and the sinking plate becomes a subduction zone. The Wadati-Benioff Zone, a zone of earthquakes located along the subduction zone, identifies a subduction zone. The earthquakes may extend down to depths of 700 km, before the subducting plate heats up and loses its ability to deform in a brittle fashion.

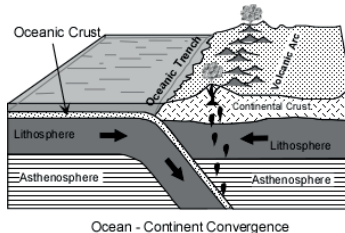
As the oceanic plate subducts, it begins to heat up, causing the release of water into the overlying mantle asthenosphere. The water reduces the melting temperature and results in the production of magmas. These magmas rise to the surface and create a volcanic arc parallel to the trench.

If the subduction occurs beneath oceanic lithosphere, an island arc is produced at the surface (such as the Japanese islands, the Aleutian Islands, the Philippine islands, or the Caribbean islands).



At ocean-ocean convergences, one plate usually dives beneath the other, forming deep trenches like the Mariana Trench in the North Pacific Ocean, the deepest point on Earth. These types of collisions can also lead to underwater volcanoes that eventually build up into island arcs like Japan.

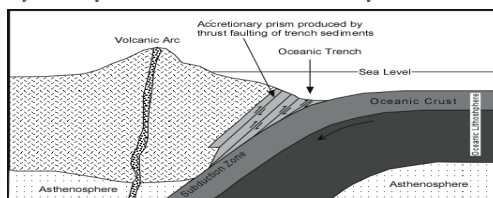
If the subduction occurs beneath continental crust, a continental volcanic arc is produced (such as the Cascades of the western U.S., or the Andes mountains of the South America)



If one of the plates has continental lithosphere on its margin, the oceanic plate will subduct because oceanic lithosphere has a higher density than continental lithosphere.

Sediment deposited along the convergent margin and particularly that in the trench will be deformed by thrust faulting. This will break the rocks up into a chaotic mixture of broken, jumbled, and thrust faulted rock known as an accretionary prism.

Where plates serving landmasses collide, the crust crumples and buckles into mountain ranges. India and Asia crashed about 55 million years ago, slowly giving rise to the Himalaya, the highest mountain system on Earth. As the mash-up continues, the mountains get higher. Mount Everest, the highest point on Earth, may be a tiny bit taller tomorrow than it is today.



These convergent boundaries also occur where a plate of ocean dives, in a process called subduction, under a landmass. As the overlying plate lifts up, it also forms mountain ranges. In addition, the diving plate melts and is often spewed out in volcanic eruptions such as those that formed some of the mountains in the Andes of South America.

Transform Plate Boundaries

Where lithospheric plates slide past one another in a horizontal manner, a transform fault is created. Earthquakes along such transform faults are shallow focus earthquakes.

Most transform faults occur where oceanic ridges are offset on the sea floor. Such offset occurs because spreading takes place on the spherical surface of the Earth and some parts of a plate must be moving at a higher relative velocity than other parts. One of the largest such transform boundaries occurs along the boundary of the North American and Pacific plates and is known as the San Andreas Fault. Here the transform fault cuts through continental lithosphere.

In conclusion, the theory of plate tectonics explains the formation of the landforms resulting from endogenic (internal) processes of warping, folding, faulting and volcanicity.

4. Influence of river action in its torrent stage on landform development in East Africa.

Approach

- Define a river.
- Describe the characteristics of a river in torrent (youthful/upper) course.
- Describe the processes of river erosion.
- Connect the processes to different landforms with illustration and examples.

A river is a large natural stream of water flowing in a channel to the sea, a lake or another river. River performs three major functions of erosion, transportation and deposition. Erosion is dominant in the youthful/torrent stage of the river.

The river in its torrent stage is characterised by; fast flowing water due to steep gradient, vertical erosion, rapids and falls, the river flows in a narrow channel.

River erosion occurs where a stream has excess energy to erode its banks and bed through abrasion, hydraulic action, solution and attrition.

Abrasion is the process of erosion through the rubbing or hitting action of materials that are carried by river (load).

Solution is process through which river valley is eroded by

the solvent action of water as it flows over the soluble rock.

Hydraulic action is the sheer force of water the river uses to erode its banks and bed. Attrition is the process by which fragments carried by the river hit and collide with each other and also with protruding rock out crops on river bed and banks and they reduce in size.

The torrent stage of the river is associated with the following features:

- The V-shaped valley
- Gorge
- River Canyon
- Water fall
- Rapids
- Potholes
- Plunge pools
- Interlocking spurs.

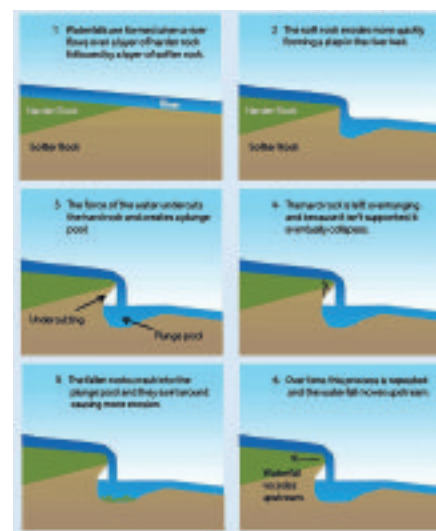
V-shaped valleys are formed due vertical erosion which exceeds the lateral (horizontal) erosion. As the valley floor deepens, the sides are worn back by weathering and mass wasting leading to a V-shaped valley.

A Gorge is a narrow, steep sided river valley. It is formed due to over deepening of the valley floor by vertical erosion. Examples are the Mitano gorge on river Birira in South Western Uganda.

A river Canyon is similar to a gorge in formation. When a gorge is extremely over deepened due to prolonged undercutting of the valley successively, it turns into a canyon. Example Kalambo river canyon in Tanzania.

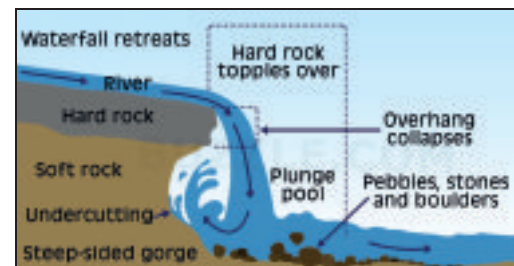
A Waterfall is a sharp break in the bed of a river that causes water to fall off an obstacle. Waterfalls are formed in several ways:

Differences in rock hardness into which river is cutting that is, when a hard rock layer lies across a river course. The soft rocks are eroded and the water drops on reaching the edge of hard rock. Example, Ssezibwa falls in Mukono-Uganda.



Water falls can also be formed due to faulting which causes fault scarp where river flows over. Example Murchison falls.

Plunge pools are formed by waterfalls which flow over soft rock that alternates with hard rock. It forms at the base of waterfall where the force of the fall digs a hole in the soft rock. Example on river Tana-Yatta plateau in Kenya.

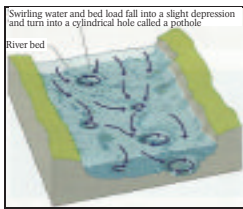


Rapids are closely related to waterfalls and are formed due to resistant intrusion of rocks. The river flow here is very fast and uneven over hard rocks which dip gently downstream.

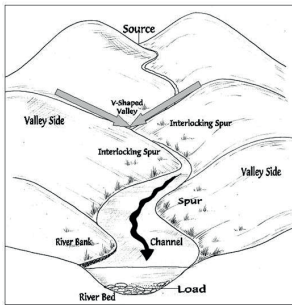
Potholes are round/oval shaped holes in the bedrock of a river bed formed due to saltation and traction movement of large pebbles and boulders that hit against the valley bed as they are rolled through. There are number of potholes on river Athi in Kenya.

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Interlocking spurs are formed when a river attempts to avoid hard and resistant rocks forming spurs (hard rocks) which interlock. Examples are found on river Ruvuma in Tanzania.



5. Describe the major theories of coral reef formation.

Approach

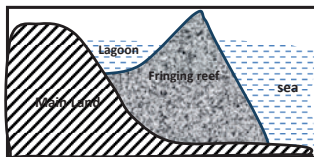
- Define coral reefs
- Describe the types of coral reefs with their characteristics.
- Describe the conditions necessary for coral formation.
- Connect the types of coral reefs to theories.

Coral reefs are rocks composed of organic materials and are formed from the accumulation of the skeleton of dead ocean animals called coral polyps. When the coral polyps die, their skeletons accumulate and pile up to form rocks called coral reefs. The skeleton are deposited to the coast by waves and then cemented by calcium carbonate salts that are contained in the bones of the coral polyps. The conditions necessary for coral reef formation include; warm salty and well oxygenated water. The water must be deep enough between 40–60 metres. Plenty of planktons and no strong waves.

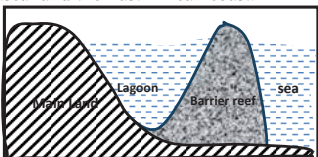
The process responsible for coral reef formation begins with death of coral polyps, accumulation of their skeletons on the continental shelf, compaction, cementation and finally hardening of the landform.

There are three types of coral reefs.

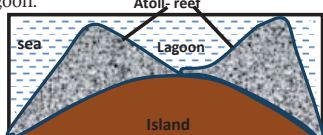
Fringing reef. This forms close to the coast, has a narrow and shallow lagoon. Fringing reefs can be found around Kilifi and Tiwi along the East African Coast.



Barrier reef. This forms far away from the coast. It is separated from the mainland by a wide and deep lagoon. Fringing reefs can be found around Mayotte Island between Madagascar and the East African coast.



An atoll coral reef. This appears like a circular array of rocks around an island when viewed from above. It has a wide, flat and shallow lagoon.

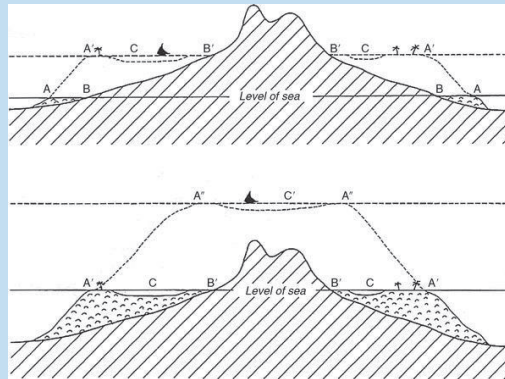


There are three major theories of coral reef formation. These include;

Darwin's theory of subsidence:

According to Charles Darwin, coral reefs form on **submarine platform** which float on **molten rocks**. Consequently, the platform begins to **sink** (subside) and as a result, coral reef on top begin to grow upwards in order to maintain its position at the water level. The growth is upwards and outwards at the same rate of the subsidence. Darwin further observed that coral reefs start as fringing reefs but later turn into barrier coral reefs due to subsidence.

To support Darwin's theory, research has proved that coral reefs grow at rate of 1 metre per every 60 year hence could keep pace with most subsidence movement. Also Darwin's theory has been supported by seismology tests which have proved that Atoll reefs are built on hard volcanic islands overlying molten magma which is the cause of subsidence.



Daly's theory of glacial control:

According to Daly, coral reefs grow with changing level of the sea. He suggested that glaciation is the major cause of these changes in sea level. According to Daly, coral reefs started with fringing reefs before glaciation. However, during glaciation, sea level fell and the coral reefs stopped growing because of cold temperatures. Due to the fall in the sea level, wave erosion reduced the fringing reefs and eroded them to sea level.

After glaciation, warm temperatures returned and glaciers melted, leading to a rise in sea level. As a result, the coral reefs started to grow upwards again, forming a barrier reef.

According to Daly, the fringing reef that had grown on the main land before glaciation turned into a barrier reef after glaciation. While the fringing reef that had grown on an island turned into an Atoll.



Criticism of Daly's theory:

Daly assumed that coral reefs did not grow during glaciation (ice age) due to cold temperatures but resumed growing after glaciation. One wonders how something dead can resume growing.

Murray's theory of antecedence (uplift) level:

According to Murray, coral reefs are built on submarine platforms which are slowly uplifted (raised) by accumulation of **pelagic deposits** (sediments deposited beneath deep ocean waters that are rich in the remains of microscopic organisms). When the **pelagic deposits** accumulated enough in the sea level, coral reefs started to form until a fringing reef developed. Murray believed that fringing reefs then form the barrier reef. He further suggested that tops of some islands were eroded by wave action, forming a platform on which Atoll coral reefs formed.

Criticism of Murray's theory

It is much easier for wave action to erode a way the pelagic deposits, which are unstable. Pelagic materials accumulate very slowly over time and could not account for the marine platforms on which coral reefs are built.

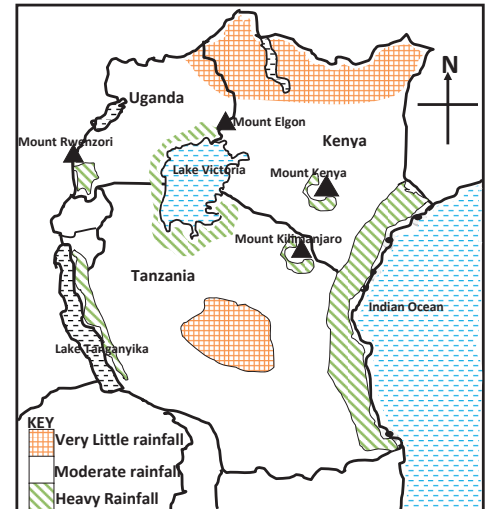
SECTION C:

6. Factors that influence rainfall patterns in East Africa:

Rainfall is the tiny water droplets falling down on the earth's surface from the atmosphere under the influence of gravity. These tiny water droplets which fall on the earth's surface are formed after there has been cooling and condensation of the warm and moist rising air into the atmosphere.

There are three types of rainfall that we receive in East Africa. That is convectional, relief or orographic and cyclonic of frontal rainfall.

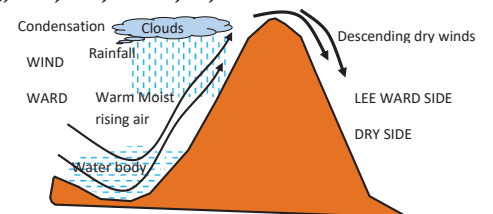
A SKETCH MAP OF EAST AFRICA SHOWING RAINFALL PATTERNS



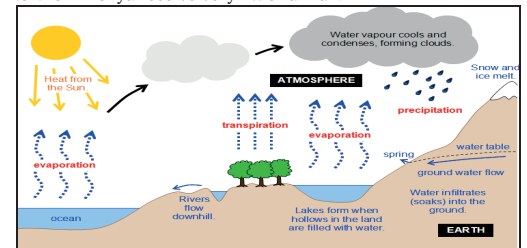
In East Africa, rainfall patterns are not uniform. This due to the different local environmental conditions.

Nature of relief and altitude in the area. Altitude is the height of land above sea level. The higher the altitude of land such as steep mountains like Rwenzori, Kenya, Elgon, Muhavura, Kilimanjaro interferes with the prevailing wind systems and in the process cause the formation of heavy rainfall on the wind-ward (wet area) side. This type of rainfall is commonly called relief or orographic rainfall.

Effects of relief on rainfall formation:



Presence of water in an area. Water bodies such as lakes increase the amount of water vapour in the atmosphere. This is through evaporation. This is commonly known as humidity. The availability of high humidity content underlies the rapid process of cooling and condensation. This explains why the shores of lakes like Victoria and coastal regions of East Africa receive heavy rainfall while North Eastern region (Karamoja) and Northern Kenya receive very little rainfall.



The nature of vegetation cover found in an area. A dense vegetation cover in an area increases the amount of water vapour in the atmosphere (humidity) through the process of evapo-transpiration. The latter increases chances for the formation of rainfall. This explains why area in Buikwe district near Mabira forest receive heavy rainfall than areas in Nakasongola.

TOMORROW IN SUNDAY VISION: LOOK OUT FOR PASS PLE