



VIVA COLLEGE SCHOOL

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HOLIDY WORK TERM THREE, 2019

GREAT MINDS SHAPE THE WORLD

SENIOR FIVE

Academics Dept

04TH DEC, 2019

SUBJECT	CHALLENGE	MKS
INSTRUCTIONS		
1. For classes 1 to 2 all questions in all subjects are compulsory 2. For senior 3 students, please attempt all questions for the compulsory subjects and only those for your options 3. For classes 5 students, please attempt all questions in your subject combination 4. For better marks, you must present and explain thoroughly well all the attempted challenges 5. For each of your study subject done, it must be put in a separate 96 exercise book 6. Holiday work must be done before reporting back to school and the respective class tutor shall receive your work on reporting		
GP.	1	To what extent is the education system responsible for the current rate of un employment in Uganda.
SUB ICT	1	(a) Distinguish between Relative cell reference from absolute cell reference . (4 marks) (b) Describe the steps one can take to align the cell entries to 45° .(3 marks) (c) Explain the four types data that is entered in a spreadsheet. (8 marks)
SUB MATH	1	1. (a) Find the inverse of the matrix P , where $P = \begin{pmatrix} 3 & 2 \\ 5 & 4 \end{pmatrix}$ and hence solve the equation $PX = Q$ in which $X = \begin{pmatrix} x \\ y \end{pmatrix}$ and $Q = \begin{pmatrix} 1 \\ 3 \end{pmatrix}$. (b) A trader who deals in sale of farm produce found that a kilogram of simsim at the farm gate in Gulu, Mbale and Jinja cost shs. 320,shs 400 and shs 350 respectively. In three weeks duration, he brought the following quantity of simsim. - In Gulu , he bought 180kg of simsim on Monday, 150kg on Tuesday and 80kg on Wednesday. - In Mbale , he bought 250kg on Monday, 200kg on Tuesday and 200kg on Wednesday. - In Jinja , he bought 160kg , 100kg and 120kg on Monday, Tuesday and Wednesday respectively. Form; (i) a 1×3 matrix showing the price of one Kilogram of simsim in Gulu, Mbale and Jinja. (ii) a 3×3 matrix showing the quantity (in kg) bought in the three towns on Monday, Tuesday and Wednesday. (c) Using matrix multiplication, find; (i) the total value of simsim bought in Gulu on Monday (ii) the total value of simsim bought in Jinja on Tuesday (iii) the total value of simsim bought in the three towns on all three days.
PRINCIPLE MATHEMATICS	1	1.(a) If $y = \sqrt{5x^2 + 3}$ show that $y \frac{d^2 y}{dx^2} + \left(\frac{dy}{dx}\right)^2 = 5$ (b) A certain arithmetic progression has a common difference of 3 . The sum of the first n terms is 670 and the sum of the first 2n terms is 2540 . Find the sum of the first 10 terms (c)Find the locus of the point which moves such that it is equidistant from the line $3x + 4y + 1 = 0$ and the point (3, 4) (d)Find the length of the tangent from the point (-2, -1) to the circle $x^2 + y^2 - 4x - 2y - 10 = 0$
	2	1. The table below shows the marks scored 8 by students A, B, C, D, E, F, G and H in Mathematics, Economics, and Geography in the end of term examinations. Calculate rank correlation coefficient between the performances of the students in: (i) Mathematics an Economics (ii)Geography and Mathematics (iii) Comment on the significance of Mathematics in the performance of Economics and Geography. [Spearman, $\rho = 0.86$, Kendall's, $\tau = 0.79$ based on 8 observations at 1 % level of significance] 2.A football player projects a ball at a speed of 8 ms⁻¹ at an angle of 30° with the ground. The ball strikes the ground at a point which is level with the point of projection. After impact with the ground, the ball bounces and the horizontal component of the velocity of the ball remains the same but the vertical component is reversed in direction and halved in magnitude. The player running after the ball kicks it again at a point which is at a horizontal distance of 0.1m from the point where it bounced, so that the ball continues in the same direction. Find the: (a) horizontal distance between the point of projection and the point at which the ball first strikes the ground [Take g = 10 ms⁻²] (b) (i)the time interval between the ball striking the ground and the player kicking it again (ii)the height of the ball above the ground when it is kicked again [Take g = 10 ms⁻²] [12 marks]
HISTORY	1	Discuss the causes of the 1959 Hutu uprising in Rwanda.
	3	1. (a) Account for the delay in the unification of the Italian states or (b) Examine the obstacles that hindered the unification of the Italian states before 1850 3. Examine the factors that favoured the unification of the Italian states after 1850

CHEMISTRY		<p>ORGANIC</p> <p>1.(a)Compound B contains 92.31% carbon and 7.69% hydrogen. Determine the empirical formula of B (b) B burns with a sooty flame and has a vapour density of 39. Determine the molecular formula of B and write its molecular structure. (c) Indicating the other reagents necessary and the conditions for the reactions, Write equation and indicate mechanism for the reaction between B and: (i) nitric acid. (ii) ethanoyl chloride (iii) propene (d) Write equation to show how B can be synthesized 2. Synthesize; (i) 2-methylbutan-2-ol from ethene, (ii) benzene from carbon, (iii) propyne from propan-1-ol</p> <p>Physical chemistry</p> <p>(a)Heptane and octane form an ideal solution. (i)State Raoult's law.(ii)Explain what is meant by an ideal solution (iii)Calculate the vapour pressure of a solution containing 50g of heptane and 30g of octane at 20°C(H=1, C=12) The vapour pressure of heptane at 20°C = 473.2 Pa, The vapour pressure of octane at 20°C = 139.8 Pa (b) Compound A (b.p 372°C) and compound B (b.p 399°C) form an ideal solution. (i) Sketch a labeled boiling / composition diagram for the mixture (ii) Using the diagram describe and explain how pure B can be obtained from a mixture containing 50% B.</p> <p>INORGANIC</p> <p>(a) (i) Describe the methods of preparing halogens in the laboratory (ii) Explain why fluorine shows some differences in its properties from the rest of the elements (chlorine, bromine, and iodine) of the periodic table (b) State the differences between the chemistry of fluorine and the rest of the elements of group(VII) of the periodic table. (c) Explain the reactions of the elements with (i) water (ii) cold dilute sodium hydroxide (iii) hot concentrated sodium hydroxide (d) Write equation for the reaction between hydrofluoric acid and silicon dioxide</p>	50mks
BIOLOGY	1	<p>1. (a) Describe what happens to pyruvic acid under aerobic conditions (10 marks) (b) Describe how fats can be metabolized to yield energy (10 marks) 2. (a) What are the essential features of the mammalian blood vascular system? (10 marks) (b) Describe the role of the blood vascular system of a mammal in each of the following processes: (i) Immunity (ii) Excretion (iii) Hormonal control(10 marks) (c) Comment on the absence of blood vascular systems in animals such as protozoa and coelenterates 3. (a) Describe the control of digestion in man (15 marks) (b) State the adaptations of the digestive system (gut) of a cow to its functions. (5 marks)</p>	60mks
BIOLOGY	3	<p>1. (a)obtain specimen K(freshly killed cockroach). using a hand lens, examine the left compound eye of the specimen including the first four segments of one antenna from the base. Draw and label the observed structures. (b)(i) Describe the structure and position of the compound eyes on the body of the organism (ii) How is the structure and positioning of the compound eyes suit survival of the specimen to life in its habitat? (c) (i) Carefully remove the one complete antennae of specimen K. from the observed features of the antennae explain how the structure and the position of the antennae adapt it to it sensory function.</p>	50mks
ECONOMICS	1	<p>1(a) Account for the predominance of small-scale enterprises in an economy (b) Explain the demerits of small-scale enterprises in an economy 2(a) What are the objectives of soliciting for Foreign Aid in an economy? (b) Explain the dangers of over relying on Foreign Aid in an economy 3(a) what are the benefits of decentralized planning in an economy? (b) Examine the factors that influence the implementation of economic development plans in an economy.</p>	60mks
ECONOMICS	2	<p>1(a) (i) define the term price support (ii) Mention any three merits of price controls in an economy (b) (i) Define cross elasticity of demand (ii) Calculate the cross elasticity of demand if the price of commodity x falls by 20 percent and quantity demanded of commodity y increases from 20 to 40 units per week. (c) (i) What is meant by the term price leadership? (ii) State any three methods of price determination in an economy (d) Mention any four causes of involuntary un employment in an economy (e) (i) Distinguish between demand pull inflation and cost push inflation. (ii) State any two causes of demand pull inflation in an economy 2(a) Distinguish between Gross Domestic Product and Gross National Product. (b) Why is it necessary to compile national income figures Uganda? 3(a) Discuss the demerits of youth unemployment in Uganda. (b) Explain the measures which have been taken to increase level of employment in Uganda.</p>	65mks
DIVINITY	1	<p>CRE PAPER 245/1 1 (a) "The division of the Kingdom of Israel in to two entirely was on King Solomon's shoulders". To what extent is the statement true? (12marks) (b). Giving examples, explain the impacts of Kingship on the social, economic and political development of Israel. (25marks)</p>	25mks
DIVINITY	2	<p>CRE PAPER 245/2 2. (a) Discuss the ways in which the early church kept their faith in God (13 marks) (b) Explain the challenges faced by the church in Uganda Today. (12 marks)</p>	25mks
DIVINITY	3	<p>CRE PAPER 245/3 3. a. Account for the rise of the East African revival movements. (13marks) b. How has the revival movement contributed to the Christianity today? (12marks)</p>	25mks

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PHYSICS	1	1. A uniform rod AB of length 4x and weight 30N is smoothly hinged at its other end, A. The rod is held at 30° to the horizontal by a string which is at 90° to the rod, and attached to it at C where $AC = 3x$. Find the: (i) tension in the string (ii) Vertical component of reaction at A. (iii) Horizontal component of reaction at A.					20 mks																																																								
	2	(a) State Coulomb's law of electro-statics (b) Derive the relation between electric field intensity, E, and electric potential, V, due to a charge at a point. (c) Two pith balls P and Q each of mass 0.1g are separately suspended from the same point by threads 30cm long. When the balls are given equal charges, they repel each other and come to rest 18cm apart. Calculate the magnitude of the charge on each ball (d) Describe how you would investigate the distribution of charge on a pear-shaped conductor (e) Explain how a charged body attracts uncharged conductor (f) Describe how an electroscope can be used to distinguish a conductor from an insulator (g) With the aid of a labeled diagram, describe the structure and action of a Van de Graaff generator .					25 mks																																																								
	3	<table border="1"> <tr> <td>x (cm)</td> <td>2.5</td> <td>5.0</td> <td>7.5</td> <td>10.0</td> <td>12.5</td> <td>15.0</td> </tr> <tr> <td>v (cm)</td> <td>53.5</td> <td>30.7</td> <td>24.0</td> <td>20.2</td> <td>18.3</td> <td>16.5</td> </tr> </table>	x (cm)	2.5	5.0	7.5	10.0	12.5	15.0	v (cm)	53.5	30.7	24.0	20.2	18.3	16.5	In an experiment to determine the focal length of a converging lens, a student obtained the following results.				40 mks																																										
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(a) Tabulate your results in a suitable table including values of $(f_1 + x)$, $\log x$ and $\log y$ where $y = (v - f_1)$ and $f_1 = 9.8 \text{ cm}$ (b) Plot a graph of $\log y$ against $\log x$ (c) Read and record the intercept I_1 on the $\log x$ axis and intercept I_2 on the $\log y$ axis (d) Find the focal length, f from the expression $2 \log f = I$ Where I is the average of I_1 and I_2																																																															
ENTREPRENEURSHIP	1	(a) Give the contribution of small and medium enterprises to the economic development of your country. (b) Account for the popularity of small and medium enterprises in Uganda. (c) Give reasons for the low level of participation of women in Entrepreneurship activities in your country.					30 mks																																																								
	2	<p>The information below was extracted from records of Kikuubo Enterprises Ltd. as at 30/06/2019</p> <p style="text-align: center;">TRIAL BALANCE AS AT 30/06/19</p> <table border="1"> <thead> <tr> <th>DETAILS</th> <th>DR shs(000)</th> <th>CR shs(000)</th> </tr> </thead> <tbody> <tr> <td>Sales</td> <td></td> <td>30,000</td> </tr> <tr> <td>Purchases</td> <td>10,000</td> <td></td> </tr> <tr> <td>Returns</td> <td>700(in wards)</td> <td>200(outwards)</td> </tr> <tr> <td>Discount</td> <td>1,000(Allowed)</td> <td>1,500(Recieved)</td> </tr> <tr> <td>Machinery</td> <td>25,000</td> <td></td> </tr> <tr> <td>Rent</td> <td>300</td> <td></td> </tr> <tr> <td>Motor vehicle</td> <td>15,000</td> <td></td> </tr> <tr> <td>Bad debts</td> <td>1,000</td> <td></td> </tr> <tr> <td>Debtors and creditors</td> <td>6,000</td> <td>4,000</td> </tr> <tr> <td>Motor expenses</td> <td>600</td> <td></td> </tr> <tr> <td>Bank</td> <td>3,000</td> <td></td> </tr> <tr> <td>Cash</td> <td>2,000</td> <td></td> </tr> <tr> <td>Stock (1/7/2018)</td> <td>4,500</td> <td></td> </tr> <tr> <td>Carriage on purchases</td> <td>500</td> <td></td> </tr> <tr> <td>Bank loan (5 years)</td> <td></td> <td>6,000</td> </tr> <tr> <td>Debentures</td> <td></td> <td>5,300</td> </tr> <tr> <td>Capital</td> <td></td> <td>22,600</td> </tr> <tr> <td>TOTAL</td> <td>69,600</td> <td>69,600</td> </tr> </tbody> </table> <p>Additional information Stock on 30/06/19 was valued at shs. 1,800,000 Calculate:</p> <p>(i) Cost of sales (ii) Net profit (iii) Average payment period in days (iv) Average collection period for debts in weeks (v) Debt-Equity ratio (vi) Cash ratio (vii) Rate of return on capital</p>					DETAILS	DR shs(000)	CR shs(000)	Sales		30,000	Purchases	10,000		Returns	700(in wards)	200(outwards)	Discount	1,000(Allowed)	1,500(Recieved)	Machinery	25,000		Rent	300		Motor vehicle	15,000		Bad debts	1,000		Debtors and creditors	6,000	4,000	Motor expenses	600		Bank	3,000		Cash	2,000		Stock (1/7/2018)	4,500		Carriage on purchases	500		Bank loan (5 years)		6,000	Debentures		5,300	Capital		22,600	TOTAL	69,600	69,600
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GEOGRAPHY	1	1 (a) Differentiate between cross profile and long profile of a river. (10 MARKS) (b) Examine the formation of landforms resulting from river erosion and deposition along a long profile of a river. (15 MARKS)					25 mks																																																								
	2	(a) Describe a term Conurbation. (5 marks) (b) With reference to either the Rand or Great lakes region, describe the factors which have led to the growth of conurbations. (20 marks)					25 mks																																																								
	3	1. For any fieldwork you have conducted on a commercial center (a) (i) State the topic of study. (2marks) (ii) Outline the objectives of the study. (5marks) (b) How did you apply the following techniques during the study? (i) Sketching (ii) Sampling (iii) Interviewing (9marks) (c) Outline the factors that limited the use of the above techniques during the study. (9marks)					50 mks																																																								
FINE ART		(i) Create two or more still life or nature compositions to create a <u>motif</u> design to be used for printing making as part of your UNEB craft assessment next year. (ii) Make notes on the topics of Studio technology that include; Ornamentation, Basketry, Leatherwork, Papier mache, Masks, and Puppetry.					40 mks																																																								
LITERATURE	1	Using the poem "The Weaver Bird" Explain the use of symbolism and imagery. Identify other poetic devices used in the poem					20 mks																																																								
	2	Read the play "The snake farmer " by Yusuf K. Serunkuma. Identify the character and write the synopsis of the play.					20 mks																																																								
	3	Write the plot and story of the novel "A walk in the Night" by Alex LA-GUMA					20mks																																																								

ENTREPRENEURSHIP

3

1. Read the case study below and answer the questions that follow.

Petero and his wife are successful entrepreneurs. They started a business of selling fried cassava using initial capital of two hundred thousand shillings (shs.200,000) raised from the sale of their inherited land.

Their business was located in a temporary structure at a busy road junction. Four years later, they re-located their business to a rented shop in the nearby trading centre. This was after a significant increase in their level of profits. Their product line was expanded to include the selling of porridge, tea, yellow bananas and soft drinks.

When their capital increased, they changed their business to a restaurant, serving traditional dishes. While Petero strategically stood outside their restaurant to welcome customers, his wife offered them seats, took their orders and ensured that they were served promptly. Petero and his wife knew most of their customers by name, their favourite dishes and drinks. Petero was always there to bid his customers farewell.

Ten years later, Petero and his wife managed to build their own business premises in the busiest part of the Central Business District of the town. Petero and his wife are always at the restaurant, except once when they lost their cousin. For the two days they were away, their sales rapidly dropped. This was partly due to the proximity to other restaurants.

QUESTIONS

- (a) (i) Mention any **two** dangers of relying on inherited property as a source of start-up capital (02 marks)
- (ii) suggest other sources of capital Petero and his wife could have used to finance their business. (03 marks)
- (b) Explain the factors that led to the success of the Petero's business. (08 marks)
- (c) How has the business contributed to the community? (06 marks)
- (d) (i) Identify the risks faced by the business. (03 marks)
- (ii) Advise the entrepreneurs on how to minimize the risks in (d) (i) above. (03 marks)
- 2. For any business field trip, you made as a group or an individual;
 - (a) Give the general description of the business.
 - (b) How does the owner of the business ensure employee motivation?
 - (c) Describe the challenges that are faced by the business.
 - (d) Give three reasons why the business should cope with change.
 - (e) Explain the promotional strategies the business uses to sustain the market share.

18mks

Assessment Percentage rank for term one 2020.

	Holiday work	Mid-term exam	End of term exam	FINAL MARK
Mid-term report	20%	80%	100%
End of term report	10%	30%	60%	100%

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Happy new year



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