



VIVA COLLEGE SCHOOL

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HOLIDY WORK TERM TWO, 2019
GREAT MINDS SHAPE THE WORLD
SENIOR SIX

Academics office
27nd APRIL, 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 teacher shall receive your work on reporting														
GP.	1	1. Examine the major causes of domestic violence in Uganda and suggest the possible remedies to curb the problems(50mks) 2. "lack of political will is the major cause of rampant corruption cases in Uganda" (50marks)	100mks											
SUB ICT	1	1. Describe the information processing life cycle and explain the hardware components involved in each stage.	20mks											
SUB MATH	1	1. A and B are events such that $P(A) = 1/3$, $P(A \text{ or } B \text{ but not both}) = 5/12$ and $P(B) = 1/4$. Calculate: (i) $P(A \cup B)$ (04marks) (ii) $P(A' \cap B)$ (02marks) (iii) $P(B'/A)$ (02marks) 2. Two men fire at a target. The probability that Allan hits the target is $1/2$ and the probability that Bob does not hit the target is $1/3$. Allan fires at the target first followed by Bob. Find the probability that: (i) Both hit the target (02marks) (ii) Only one hits the target (03marks) (iii) None of them hits the target. (02marks)	20mks											
PRINCIPLE MATHEMATICS	P 1	1. Using De Moivre's theorem, show that: $\tan 4\theta = \frac{4 \tan \theta - 4 \tan^3 \theta}{1 - 6 \tan^2 \theta + \tan^4 \theta}$ (3marks) Hence or otherwise find the values of θ on $0^\circ \leq \theta \leq 360^\circ$ which satisfy the equation $\frac{4 \tan^2 \theta - 4 \tan^4 \theta}{1 - 6 \tan^2 \theta + \tan^4 \theta} = 1$ (3marks) (b) Show that $(Z + 4i)$ is a factor of $Z^4 - 4Z^3 + 21Z^2 - 4Z + 20 = 0$, hence find the other roots. (4 marks) 2. Find the possible values of n if $y = Ae^{nx}$ satisfies the equation $\frac{d^2y}{dx^2} - 4 \frac{dy}{dx} + 3y = 0$. (5marks) 3. Differentiate: $\sin^{-1} \left(\frac{1-x^2}{1+x^2} \right)$ (5 marks)	20mks											
	P 2	1. The times to the nearest second, taken by 100 students is to solve a given problem are shown below (a) Calculate the (i) modal time (ii) median time (iii) variance (b) Represent the above data on a histogram. Use it to estimate the modal time. (10mks) <table border="1"><thead><tr><th>Times</th><th>No. of students</th></tr></thead><tbody><tr><td>30 - 49</td><td>10</td></tr><tr><td>50 - 59</td><td>30</td></tr><tr><td>65 - 69</td><td>25</td></tr><tr><td>70 - 74</td><td>20</td></tr><tr><td>75 - 99</td><td>15</td></tr></tbody></table> 2. The number of cows owned by residents in a village is assumed to be normally distributed. 15% of the residents have less than 60 cows. 5% of the residents have over 90 cows. (a) Determine the values of the mean and standard deviation of the cows. (b) If there are 200 residents, find how many have more than 80 cows	Times	No. of students	30 - 49	10	50 - 59	30	65 - 69	25	70 - 74	20	75 - 99	15
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CHEMISTRY		INORGANIC (a) Write the formula and names of two ores from which copper can be extracted. (b) Describe how: (i) One of the ore in (a) can be concentrated (03 mks) (ii) Pure copper can be extracted from the ore concentrated in b(i) (c) Discuss the reactions of copper with ; (06 marks) (i) Hydrochloric acid (ii) Sulphuric acid (d) Few drops of potassium hexacyanoferrate(II) solution were added to copper (II) sulphate solution; (i) State what was observed. (ii) Write equation for the reaction. ORGANIC 2. Using equations only and suitable conditions, show how the following conversions can be effected. (i) Propane -1, 2, 3 - triol to $C_{17}H_{35}$, $\overline{CO}Na^+$. (02 marks) (ii) Ethanedioic acid from propanamide. (03 marks) (iii) CO_2 to $CH_3CH=CH_2$ (04 marks) (iv) $CH_3C \equiv CH$ from propene. (8 marks) (v) $CH_3CH_2NH_2$ from $CH_3CH_2CONH_2$. (01 mark) (vi) $CH_3CH_2COCH_3$ from $CH_3CH=CHCH_3$ (4½ marks) PHYSICAL 3.(a) (i) What is meant by the term buffer solution . (02 marks) (ii) Explain how a mixture of benzoic acid and sodium benzoate can function as a buffer. (03 marks) (b) (i) Draw a sketch graph to show the change in pH when 0.1 M sodium hydroxide solution is added to 20cm ³ of 0.1 M ethanoic acid. (02 marks) (ii) Explain the shape of the graph in (b) (i) above. (03 marks) (c) 20.0 cm ³ of 0.2 M aqueous ammonia was added to 10cm ³ of 0.15M hydrochloric acid. (i) Calculate the pH of the resultant solution at 25°C. (03 marks) (The base dissociation constant K_b of ammonia is 1.8×10^{-5} at 25°C) (ii) State any assumptions made. (01 mark) (d) To 20.0cm ³ of 0.02M aqueous ammonia was added as equal volume of a 0.02M hydrochloric acid. (Hydrolysis constant K_h of ammonium chloride = $5.6 \times 10^{-10} \text{ moldm}^{-3}$). (i) Calculate the pH of the resultant solution (03 marks) (ii) Explain your answer in (d) (i) above. (03 marks)	40mks											
BIOLOGY		1.(a) Explain the physiology of germination. (10 marks) (b) Describe the process of secondary thickening in typical woody plants. (10 marks) 2. (a) Describe how proteins are metabolized by the body to produce energy during prolonged starvation. (10 marks) (b) Describe the chemiosmotic theory of ATP synthesis. (10marks)	40mks											

PHYSICS	1	1(i) what is meant by Dimension of a physical quantity ? (1mark) (ii)For stream line flow of a non-viscous, incompressible fluid, the pressure P at a point is Related to the height h and velocity v by the equation $(p-a) = \rho g (h-b) + 4\rho (v^2 - d)$ Where a, b, d are constants, ρ is the density of the Fluid and g is acceleration due to gravity. Given that the equation is dimensionally consistent, find the dimensions of a, b and d and hence the Respective units. (5marks) 2. A car of mass 1000kg climbs a track, which is inclined at an angle of 30° to the horizontal. The speed of the car at the bottom of the track is 36km/hr. If the coefficient of friction is 0.3 and the engine of the car exerts a force of 4000N, (i)How far up the incline does the car move in 10s?(4marks) (ii)What is the speed of the car at this point? (3mks) (iii)What is the power developed by the engine then? (2mks)	15mks
	2	1. Using ray diagrams define the following terms: (i) principal focus (ii)conjugate points as applied to a thin converging lens (b) (i) Describe how the focal length of a converging lens can be determined by the displacement method (ii) Taking l as the distance between the conjugate foci of the lens and d in the displacement of the lens, in the above experiment in (i), derive the expression $f = \frac{l^2 - d^2}{4l}$ (c)An illuminated object is placed at right angles to the axis of a convex lens of focal length 30cm. Determine the position of the final image (i)when the two lenses are 15cm apart and a plane mirror is placed perpendicular to the axis, 40cm beyond the concave lens. When the mirror is removed and the lenses are 35cm apart.	20mks
ECONOMICS		1. (a) Explain the Malthusian theory of population. (06 marks) (b) To what extent is the theory relevant to the country? (14marks)	20mks
		2. (a) Differentiate between disposable income and per capita income(04 marks) (b) What are the limitations of per capita income to compare standards of livings between countries? (16 marks)	20mks
HISTORY	1	Examine the role of A.N.C in dismantling apartheid rule in South Africa.	25mks
	3	1.“Russia was mainly responsible for the outbreak of the Cold war”. Discuss. (25marks) 2 Describe the organization of the United Nations Organization. (UNO) (25 marks)	50mk
FINE ART		Make a composition from any topic/ theme of Still- life, Nature, or geometric shapes and forms of your preference keeping in mind the Elements and Principles of art and design. The composition will be used to create (a) motif design(s) for your UNEB Print-making pieces on cloth.	50mks
ENTRE	1	(a) Why should entrepreneurs prepare business plans? (10mks) (b) Discuss the challenges faced by entrepreneurs when implementing business plans (10mks)	20mks
	2	You operate bakery project in your home area (a)State the;- (i) Mission (2mks) (ii) Objectives of the business (5mks) (b)Present guidelines to promote employees motivation in your project (6mks) (c)Design product distribution schedule for the business (5mks) (d)Draw a programme to be followed when purchasing business requirements (6mks)	22mks
	3	For any business field trip carried out as an individual or as a group; (a)Describe the nature of the business (4mks) (b) Describe the play layout of the business (6mks) (c)Explain the promotional strategies the business uses to maintain the market share (8mks) (d)What factors does the business owner consider when recruiting employees? (7mks)	25mks
DIVINITY	1	1(a) Discuss Ezekiel’s teaching on individual Responsibility of sin? 13 marks (b) What is the relevance of his teaching to Christians today? 12 marks	25mks
	2	1. Justify the view that women were good disciples of Jesus in the gospel of Mark and John.(25 marks) 2. (a)Comment on the significance of the third sign recorded in the fourth gospel. (13 marks)	38mks
	3	1 a) Explain the problems caused by the HIV/AIDS epidemic to the family/community today? 13 marks b) What is the church doing in the fight against the HIV/AIDS epidemic? 12 marks	25mks
LITERATURE	1	Write brief notes about the following terms as used in Prose and Poetry 1.Prose (2marks) 2. Poetry (2marks) 3. Personification (2marks) 4. Similes (2marks)5. Metonymy (2marks) 6. Synecdoche (2marks) 7. Metaphor (2marks) 8. Subject matter of the poem (2marks) 9. Theme of the poem (2marks)) 10. Speaker (2marks)	
	2	Clearly write the synopsis of the play; Lwanda Magere	20mks
	3	Write the plot and story of the novel Heart of the Matter.	20mks
GEOGRAPHY	1	1 Describe the formation of wave depositional landforms in East Africa?	25mks
	2	Assess the contribution of the Trans-Siberian railway or the Rhine water way to development of their respective countries.	25mks
	3	To what extent have physical factors hindered the effective utilization of tropical rainforests in Uganda?	25mks

assessments Percentage rank for term two

	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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