VIVA COLLEGE SCHOOL

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

## SUBJECT

CHALLENGE
MKS
INSTRUCTIONS

1. For classes $\mathbf{1}$ 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. | $\mathbf{1}$ | 1. Examine the major causes of domestic violence in Uganda and suggest the possible remedies to curb the problems( 50 mks$)$ <br> 2." lack of political will is the major cause of rampant corruption cases in Uganda" ( 50 marks) | 100mks |
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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 $\mathrm{C}_{17} \mathrm{H}_{35}, \mathrm{CO} \bar{O} \mathrm{Na}^{+}$. (02 marks) (ii) Ethanedioic acid from propanamide. (03 marks) (iii) $\left(\mathrm{CO}_{2}\right.$ to $\mathrm{CH}_{3} \mathrm{CH}=\mathrm{CH}_{2} \quad$ ( 04 marks) (iv) $\mathrm{CH}_{3} \mathrm{C} \equiv \mathrm{CH}$ from propene. (8 marks) (v) $\mathrm{CH}_{3} \mathrm{CH}_{2} \mathrm{NH}_{2}$ from $\mathrm{CH}_{3} \mathrm{CH}_{2} \mathrm{CONH}_{2}$. (01 mark) (vi) $\mathrm{CH}_{3} \mathrm{CH}_{2} \mathrm{COCH}_{3}$ from $\mathrm{CH}_{3} \mathrm{CH}=\mathrm{CH} \mathrm{CH}_{3} \quad$ ( $41 / 2$ 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 $20 \mathrm{~cm}^{3}$ of 0.1 M ethanoic acid. ( 02 marks) (ii) Explain the shape of the graph in (b) (i) above. ( 03 marks)
(c) $20.0 \mathrm{~cm}^{3}$ of 0.2 M aqueous ammonia was added to $10 \mathrm{~cm}^{3}$ of 0.15 M hydrochloric acid.
(i) Calculate the pH of the resultant solution at $25^{\circ} \mathrm{C}$. ( 03 marks) (The base dissociation constant Kb , of ammonia is $1.8 \times 10^{-5}$ at $25^{\circ} \mathrm{C}$ ) (ii) State any assumptions made. ( 01 mark)
(d) To $20.0 \mathrm{~cm}^{3}$ of 0.02 M aqueous ammonia was added as equal volume of a 0.02 M hydrochloric acid. (Hydrolysis constant Kh of ammonium chloride $=5.610^{-10} \mathrm{moldm}^{-3}$ ).
(i) Calculate the pH of the resultant solution (03 marks) (ii)Explain your answer in (d) (i) above. (03 marks)
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)

CHEMISTRY

| PHYSICS | 1 | 1(i) what is meant by Dimension of a physical quantity? <br> (ii)For stream line flow of a non-viscous, incompressible fluid, the pressure P at a point is <br> Related to the height $h$ and velocity $v$ by the equation $(p-a)=p g(h-b)+4 p\left(v^{2}-d\right)$ <br> Where $\mathrm{a}, \mathrm{b}, \mathrm{d}$ are constants, p is the density of the Fluid and g is acceleration due to gravity. <br> Given that the equation is dimensionally consistent, find the dimensions of $a, b$ and $d$ and hence the Respective units. <br> (5marks) <br> 2. A car of mass 1000 kg climbs a track, which is inclined at an angle of $30^{\circ}$ to the horizontal. The speed of the car at the bottom of the track is $36 \mathrm{~km} / \mathrm{hr}$. If the coefficient of friction is 0.3 and the engine of the car exerts a force of 4000 N , (i)How far up the incline does the car move in 10s?(4marks) <br> (ii)What is the speed of the car at this point? (3mks) (iii)What is the power developed by the engine then? (2mks) | 15 mks |
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|  | 2 | 1. Using ray diagrams define the following terms: (i) principal focus (ii)conjugate points as applied to a thin converging lens <br> (b) (i) Describe how the focal length of a converging lens can be determined by the displacement method <br> (ii) Taking $l$ as the distance between the conjugate foci of the lens and $\boldsymbol{d}$ in the displacement of the lens, in the above experiment in (i), derive the expression $f=\frac{l^{2}-d^{2}}{4 l}$ <br> (c)An illuminated object is placed at right angles to the axis of a convex lens of focal length <br> 30 cm . Determine the position of the final image (i)when the two lenses are 15 cm apart and a plane mirror is placed perpendicular to the axis, 40 cm beyond the concave lens. When the mirror is removed and the lenses are 35 cm apart. | 20mks |
| ECONOMICS |  | 1. (a) Explain the Malthusian theory of population. (06 marks) <br> (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) <br> (b) What are the limitations of per capita income to compare standards of livings betweens 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) <br> (b) Discuss the challenges faced by entrepreneurs when implementing business plans (10mks) | 20mks |
|  | 2 | You operate bakery project in your home area <br> (a)State the;- (i) Mission (2mks) (ii) Objectives of the business ( 5 mks ) <br> (b)Present guidelines to promote employees motivation in your project ( 6 mks ) <br> (c)Design product distribution schedule for the business ( 5 mks ) <br> (d)Draw a programme to be followed when purchasing business requirements ( 6 mks ) | 22mks |
|  | 3 | For any business field trip carried out as an individual or as a group; <br> (a)Describe the nature of the business ( 4 mks ) (b) Describe the play layout of the business ( 6 mks ) <br> (c)Explain the promotional strategies the business uses to maintain the market share ( 8 mks ) <br> (d)What factors does the business owner consider when recruiting employees? ( 7 mks ) | 25mks |
| DIVINITY | 1 | 1(a) Discuss Ezekiel's teaching on individual Responsibility of sin? 13 marks <br> (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. | 38mks |
|  | 3 | 1 a) Explain the problems caused by the HIV/AIDS epidemic to the family/community today? 13 marks <br> 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 <br> 1.Prose (2marks) 2. Poetry (2marks) 3. Personification (2marks) 4. Similes (2marks)5. Metonymy (2marks) <br> 6. Synecdoche (2marks) 7. Metaphor (2marks) 8. Subject matter of the poem (2marks) <br> 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 |
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| Mid-term report | $20 \%$ | $\mathbf{8 0 \%}$ | $\ldots \ldots \ldots$. | $100 \%$ |
| End of term repot | $10 \%$ | $30 \%$ | $\mathbf{6 0 \%}$ | $100 \%$ |

GREAT MINDS SHAPE THE WORLD

