

ST LAWRENCE ACADEMY SCHOOLS AND COLLEGES.

HOLIDAY WORK TERM 1 2020

BIOLOGY

INSTRUCTIONS: DO ALL QUESTIONS

1. State hardy weinberg equilibrium
2. Explain the conditions for conditions for hardy Weinberg equilibrium
3. Describe how new species arise in a population

ECONOMICS

INSTRUCTION: DO ALL NUMBERS

1. (a) Distinguish between price elasticity of demand and income elasticity of demand(04 marks)
(b) Explain the factors that influence price elasticity of demand (16 marks)
2. (a) Distinguish between break-even point and shut-down point of a firm (06 marks)
(b) Explain why some firms continue operating even when they are below their break-even.(16 marks)

END

CRE P245/4

CHRISTIAN APPROACHES TO SOCIAL AND ETHICAL ISSUES

INSTRUCTIONS

Attempt all questions

1. **Compare the African and Christian understanding of work.**
25mks
2. **Account for people's low estimates in work today. 13mks**

END

S.5 COMPUTER STUDIES

INSTRUCTIONS.

Attempt all Questions (30 Marks).

1. Differentiate between word processor and word processing.
b). State three examples of word processing software.
C). Explain the following features as used in word processing;(1Mark@)
 - i. Editing.
 - ii. Formatting a document.
 - iii. Save.

- iv. Save As.
 - v. Cut.
2. State the difference between digital divide and digital migration.
 - b). Mention four factors leading to digital divide.
 - c). Define artificial intelligence as used in computing.
 - d). State five applications of artificial intelligence in the world today.
 3. State the function of each of the following utility programs.
 - i. Diagnostic utility.
 - ii. File compression utility.
 - iii. Antivirus utility.
 - iv. Screen savers.
 - v. Disk defragmentation.

END

GENERAL PAPER

INSTRUCTIONS

Answer ONE question.

- 1. Examine the causes and effects of domestic violence in your society.**
- 2. Discuss the merits and demerits of multiparty politics in your country.**

END

FINE ART

P615/1 attempt one alternative

- Make a study of a front view of a cockroach.

P615/2 Choose either from a or b

- a) A male modal dressed in a T shirt, a trouser folded to the knees and sandals sits on a coiled stool with a pot between her legs holds a straw with both hands resting on the thighs so that he appears to drink local beer.
- b) Create a pictorial composition in color from one of the following topics
 - At night
 - A sick child
 - Ciaos at the polling station
 - A scary village

P615/3

Rewrite the following message in a good calligraphic design and a well-designed boarder.

Despite the beauty of
the moon, sun and the stars
the sky also has
a threatening thunder and

striking lightening

P615/4 attempt all questions

1. a) Define the term studio technology. (2 mark)
- b) List five relevancies of studio technology (4 marks)
2. a) what is a craft (2 mark)
- b) Give four types of crafts and an example of each type. (8 marks)
3. a) Differentiate between elements and principles of art. (2 marks)
- b) Explain with illustrations the elements of art and design. (10 marks)
4. a) what is a void (2 mark)
- b) explain the three types of relief sculpture. (6 marks)
- c) why is relief sculpture considered 3D and yet its seen from one direction. (2 marks)
5. a) What is paper mache? (2 mark)
- c) Briefly explain the procedure of making a sculpture from paper mache?

PHYSICS 1

1. (a) (i) Define specific heat capacity of a substance. (1mark)
 - (ii) State three advantages of continuous flow method over the method of mixtures in determination of specific heat capacity of a liquid. (3marks)
 - (b) In a continuous flow experiment, a steady difference of a temperature of 1.5°C is maintained when the rate of liquid flow is 45gs^{-1} and the rate of electrical heating is 60.5W . On reducing the liquid flow rate to 15gs^{-1} , 36.5W is required to maintain the same temperature difference. Calculate the:
 - (i) Specific heat capacity of the liquid. (4marks)
 - (ii) Rate of heat loss to the surroundings. (3marks)
 - (c)(i) Describe an electrical method for determination of the specific heat capacity of a metal
 - (ii) State the assumptions made in the above experiment. (2marks)
 - (iii) Comment about the accuracy of the results of the experiment in c (i) above. (1mark)
2. (a) Define the terms range and time of flight as applied to projectile motion. (2marks)
 - (b) Derive the expression for the time flight of a body projected with a speed, v at angle, α to the horizontal (4marks)
 - (c) A projectile is fired at an angle of 37° with the horizontal with a speed 60ms^{-1} .
 - (i) Find the maximum height attained (2marks)
 - (ii) After how long will it be 28.0m below the point of projection? (3marks)

- (iii) Find the velocity of the projectile at the time in c(ii) above (5marks)
- (d) Differentiate between scalar and vector quantities and give two examples of each

PHYSICS 2

1. (a) (i) Define reflection *01mk*

(ii). When a plane mirror is turned through an angle α , the reflected ray turns through an angle β . Derive the relationship between α and β *03mks*

(b). Describe an experiment to determine the focal length of a diverging mirror using a plane mirror. *05mks*

(c).(i). Derive an expression for the combined focal length, F, of a thin convex lens of focallength f_1 , in contact with a thin concave lens of focal length f_2 . *04mks*

(ii). A thin equiconvex lens made of glass of refractive index 1.5 is placed on a horizontal plane mirror. A thin pin fixed 15cm above the lens is found to coincide in position with its own image. When the space between the plane mirror and the equiconvex lens is now filled with a liquid; the point of coincidence of the pin and its image is found to be 27cm. Find the refractive index of the liquid. *04mks*

(d). Explain why two different objects O_1 and O_2 of different heights h_1 and h_2 would always appear to be of the same height *03mks*

2. (a) Define

(i) Capacitance of a capacitor. *(1mark)*

(ii) Relative permittivity. *(1mark)*

(b) Describe an experiment to determine the relative permittivity of a material given using a capacitor and a ballistic galvanometer. *(4marks)*

(d) Explain how the dielectric placed between the plates of a capacitor increases the capacitance. *(4marks)*

(e). A parallel plate capacitor consists of two plates of area $1.00 \times 10^{-2} \text{m}^2$ placed a distance $2.00 \times 10^{-2} \text{m}$ apart in air. The capacitor is charged so that the potential difference between the plates is 1000v. Calculate

(i). the electric field intensity between the plates (neglect the edge effect)

(ii). the capacitance of the capacitor

(iii). the energy stored in the capacitor *06mks*

END

CHEMISTRY

Attempt all questions

1. The table below shows the melting points of some of the elements in Period 3 of the Periodic table.

Element	Na	Mg	Al	Si	P	S	Cl	Ar
Atomic number	11	12	13	14	15	16	17	18
Melting point (°C)	98	650	660	1423	44	120	-101	-189

(a) Define the term melting point. (1 mk)

(b) Explain

(i) The trend in the melting point of the elements from sodium to aluminium. (2½ mks)

(ii) Why the melting of silicon is very high. (1½ mks)

(iii) Why the melting point of sulphur is much higher than that of chlorine. (2 mks)

(c) (i) Write equation to show how anhydrous aluminium chloride can be prepared. (1½ mks)

(d) (ii) Aluminium chloride was dissolved in water and the solution tested with litmus paper. State what was observed and explain your answer. (4 mks)

(e) Write equation and state the conditions under which sodium hydroxide can react with

(i) aluminium. (2½ mks)

(ii) chlorine. (5 mks)

END

S5 HISTORY 1

(NATIONAL MOVEMENTS AND NEW STATES OF AFRICA)

Attempt all questions

1. Examine the factors that contributed to the rise and development of African Nationalism (25 marks)

2. Assess the role of the MPLA in the Angolan struggle against Portuguese rule

(25 marks)

S5 HISTORY 3 (EUROPEAN HISTORY)

Attempt all questions

1. How did the revolutionary events in France from 1789-1799 impact on her Neighbors?
(25marks)
2. "Napoleon Bonaparte was a product of circumstances beyond his own making" Discuss

LITERATURE P310/3

NOVELS AND SHORT STORIES.

INSTRUCTIONS: ANSWER ALL QUESTIONS

Question:

1. Who is to blame for the tragedy that befalls Tess?
2. "Tess is a woman more sinned against than sinning." With reference to the novel Tess of the D'Urbervilles. Discuss the validity of the statement

END.

MATHS I 2020

1. Solve the equation $7^{2x} + 7^{x+1} + 4 = 0$. Correct to 4 decimal places.
2. If the roots of the equation $x^2 + (x+1)^2 = k$ are α and β .
 - (a) Prove that $\alpha^3 + \beta^3 = \frac{1}{2}(1 - 3k)$.
 - (b) Find a quadratic equation whose roots are α^3 and β^3 .
3.
 - (a) Express $2\sin x - 3\cos x$ in the form $R\cos(x - \theta)$ and find its maximum and minimum values.
 - (b) Solve: $2\cos^2(x - \frac{\pi}{2}) - 3\cos(x - \frac{\pi}{2}) = 2$ for $\sin x$. Hence find the values of x where $0^\circ \leq x \leq 360^\circ$.
4.
 - (a) The second and third terms of a geometrical progression are 24 and $12(b+1)$. Find b if the sum of the first three terms of the progression is 76.
 - (b) Prove by induction that $9^n - 1$ is a multiple of 8 for all positive values of n .

GEOGRAPHY

P250/1

1. Explain the influence of tectonic movements on the formation of highland in east Africa?
2. To what extent has relief influenced the development of soil profile in east Africa?

P250/2

1. Assess the contribution of physical factors to the growth of marine fishing in either Namibia or Chile.
2. To what extent have human factors contributed to wide spread famine in tropical Africa.

P250/3

1. (a) Explain the state of mining in Uganda. (10marks)
(b) What are the challenges of increased mineral exploitation in Uganda? (15marks)

ENTREPRENEURSHIP

INSTRUCTIONS

- Answer all questions in all papers
- Evidence must be attached for paper three

PAPER ONE

- 1(a). Explain the barriers to entrepreneurship development in your country.
(10 mks)
(b). How has the government of your country promoted entrepreneurial development.
(10 mks)
- 2(a). With the aid of a well labeled diagram, describe the communication process. (14 mks)
(b). What are the barriers to effective communication. (06 mks)

CRE 1

- 1a. Discuss the importance of the creation stories in the book of genesis to mankind.
b. What is the meaning of creating man in god's image.
- 2a. DISCUSS THE MEANING OF God's command to man to be fruitful and multiply.
b. How has man failed to live up to the above command?
- 3a. Examine god's plan for mankind as portrayed in the book of genesis 1 and 2
b. How has man fulfilled this plan?
4. From your study of genesis 1 – 3 comment on the nature of the following.
 - a. Man
 - b. God

End

MATH PAPER 2

1. The table shows the distribution of marks of group candidates during an examination.

Marks	Frequency
0 - 10	10
10 - 20	25
20 - 40	30
40 - 60	42
60 - 70	16
70 - 95	15

(a) Calculate

- i) mean mark
- ii) standard deviation

(b) Draw a histogram hence estimate the mode.

2. A car initially at rest at a point A on the straight line ABCD. The car moves from A to B with uniform acceleration reaching B with a speed of 12m/s after 2seconds. The acceleration then alters to 1ms^{-2} and 8seconds after leaving B, the particle reaches C. the particle then returns uniformly to come to rest at D after a further 10seconds.

Draw a velocity time graph for the motion and find

- a) The acceleration of the particle from A to B.
- b) Speed of the particle on reaching C

The retardation of the particle when travelling from C to D.

SUBMATH

1. (a.) The data below shows the expenditure in thousands of shillings of 8 families during the month of May 2015.

25, 20, 21, 23, 27, 23, 30, y.

If the mean expenditure was shs.24,000. Find the;

- (i.) Value of y
- (ii.) Modal expenditure
- (iii.) Median expenditure.

- (b.) The total score in Mathematics and English obtained by 30 students were

164 148 138 145 153 157 147 174 143 148
136 154 170 128 140 178 165 121 149 161
143 150 139 151 139 165 151 133 145 126

Calculate

- (i) The mean mark
- (ii) The median mark.

2. The cost of building a house is calculated from the costs of cement, sand, bricks, roofing materials and labour.

The table below gives the costs of these items in 2010 and 2014.

ITEM	COST (shs.) PER UNIT 2010	COST (shs.) PER UNIT 2014	WEIGHTS
Cement	25000	30000	20
Sand	120000	125000	3
Bricks	230000	290000	2
Roofing materials	600000	800000	1
Labour	400000	450000	1

Using 2010 as base year , calculate the weighted aggregated price index for 2014. And comment on the result.

END

agizo: Jibu swali lote.

UFAHAMU

1. Soma taarifa ifuatayo kasha ujibu maswali yatakayofuata.

Wakati ule Simba akazeeka sana asiweze kwenda mawindoni. Kwa sababu hiyo, alifanya akili. Alituma salamu kwa wanyama wote wadogo kwa wakubwa akiwaarifu kwamba alikuwa mgonjwa mahututi. Aliwaomba kama ilivyokuwa desturi wakati huo wamtembelee kumjulua hali. Alitoa shauri kwamba ilifaa kila mnyama kumzuru mmoja baada ya mwingine. Akasema kwamba wakati wake wa kuaga dunia ulikuwa umewadia na ulikuwa wakati wa kila mnyama kumpa buriani.

Wanyama wakubwa kwa wadogo waliposikia habari hii ya kuugua kwa Simba aliyekuwa mfalme wao wakaanza mmoja baada ya mwingine kuzuru maskani ya Simba. Walifanya hivyo kumwonyesha mfalme wao mapenzi waliyokuwa nayo kwake hasa wakati huu wa kuugua. Lakini ajabu ni kuona kwamba kila mnyama aliyeingia pango alimoishi Simba hakurudi tena. Wanyama wengi waliporomokea mdomo wa Simba ambamo walijipeleka wao wenyewe. Simba aliwafanya chakula chake bila kushughulika sana.

Siku moja Sungura hata naye akaona heri amtembelee mfalme wake kabla hajafa. Alipokaribia mlango wa pango akakataa kuingia ndani baada ya kuchunguza kwa uangalifu alama ambazo hazikumpendeza. Alisimama nje kwa muda. Simba alipomwona akapaaza sauti kwa kumkaribisha. Akasema, "Rafiki karibu. Nina furaha nyingi kukukaribisha; hatujakutana kwa muda mrefu. Leo ni siku nzuri kwangu ninapokuona hapa." Alipomaliza kusema hayo Simba akamuarifu Sungura aingie waongee kidogo kwa kuwa saa zake za kuishi duniani zilikuwa zimepunguka.

Sungura akamjibu, "Kuingia sichelewi ndugu yangu kwa sababu umenilaki vizuri name ningependa nikujulie hali kabla hujafa. Lakini ninapotazama nyayo za wanyama ambao wamekutembelea, naona zinaelekea pangoni na hakuna nyayo zinazotoka. Kwa hivyo rafiki na tena mfalme wangu Simba utanisamehe; sitaingia abadani. Ni vizuri nimeweza kukutazama kidogo kabla hujaenda kuzimu kwa hivyo

sasa kwa heri. Ninawapa salamu walio kuzimuni wa zamani za kale na wa juzijuzi!"

Baada ya kusema hayo Sungura akarudi kwake akiwazia kunusurika kwake hali kadhalika Simba akashangilia uhodari wa Sungura.

Maswali:

- a) Pendekeza kichwa cha taarifa hii (alama 02)
- b) Simba alitoa shauri gani kwa wote waliomtembelea? (alama 02)
- c) Wanyama walitaka kumwonyesha nini mfalme wao? (alama 02)
- d) Uzee huwaletea nini jamii ya wanyama walao nyama? (alama 02)
- e) Nyayo za wanyama waliomtembelea Simba zilionyesha nini? (alama 02)
- f) Kwa nini kila mnyama aliyeingia pangoni hakutoka tena? (alama 02)
- g) Simba alifanya nini alipomwona Sungura? (alama 02)
- h) Sungura alituma Simba awaambie nini wa kuzimu? (alama 02)
- i) Akili za wanyama zilizoporomokea pangoni, isipokuwa Sungura, zinaonyesha nini? (alama 02)
- j) Ingawa ilijulikana kwamba Simba alikuwa mgonjwa mahututi lakini hakukosa kuongea kwa sauti, kwa nini? (alama 02)

MWISHO