

- velocity for an extra 8 seconds and finally he comes to rest in 7 seconds.
- (i) Draw the velocity –time graph for the motion
 - (ii) Calculate the retarding force that acted in the last stage
5. (a) (i) Explain the cause of atmospheric pressure.
 (ii) Explain why atmospheric pressure varies with altitude.
- (b) Two stones one 6kg and the other 12kg are released at the same time from a tall tower. explain why the stones hit the ground at the same time yet they have different weights
- (c) i) Describe how the calibration of mercury thermometer is done.
 ii) Describe seven properties that make mercury a good liquid for thermometers
- (d) The fundamental interval in a mercury thermometer is 24cm. Find the temperature reading when the mercury thread is 16cm above the lower fixed point.
6. (a) Explain the following observations.
 i) When moving in a car that is over taking another, the car appears to be moving at a lower velocity than it is.
 ii) When moving in a car, the trees appear to be moving backwards.
- (b) (i) Describe how sound is transmitted from a drum when it is hit.
 ii) Explain why sound moves faster in solids than in air
7. a) (i) Distinguish between the melting point and the boiling point of a substance.
 (ii) Explain why ice is slippery when you try to hold it, but when the ice is very cold it sticks to your skin.
 iii) In some cold countries salt is sprinkled on ice on the road to make it melt. Explain why sprinkling salt on ice makes it melt faster.
8. (a) state pressure law
- (b) i) define dew point
 ii) What is a saturated vapour
 iii) Distinguish between a vapour and a gas
- (c) A balloon is inflated and then left in the hot sun.
 i) Describe what is likely to be observed.
 ii) Explain the observations above
- (d) Describe three differences between the four stroke diesel engine and the four stroke petrol engine.
- (e) The cooling system of an engine uses water that circulates at the rate of 5kg per minute. The engine raises the temperature of the water to 90°C and the radiator cools the water 30°C.
 i) Calculate the power wasted as heat in the engine.
 ii) State one assumption made in the calculation above.

BIOLOGY 553/1 QUESTIONS

1. a) With the aid of labeled diagrams, explain the differences between hypogeal and epigeal germination
 b) Describe an experiment you would carry out to show that germinating seeds give out heat.
2. a) Give 3 secondary sexual characteristics in the human female.
 b) Outline the events that lead to the fertilization of the ovum in the human female.
3. a) What are the functions of skeleton in mammals?
 b) Describe the different types of skeleton in mammals.
4. a) Outline the causes of water pollution
 b) What are the effects of water pollution?
 c) Suggest ways of controlling water pollution
5. a) What is parasitic mode of nutrition?
 b) Describe the life cycle of a tape worm.
 c) give reasons why a tape worm is a water pollution
6. a) What do you understand by the following terms:
 i) Habitat
 ii) Ecosystem
 iii) Biosphere
 iv) Niche
 v) Food chain
 vi) Food net
 b) Use the following organisms to construct a food web showing their feeding relationships.
 Chameleon, moth, grasshopper, herbaceous bug, praying mantis, predatory bug, plants.
 c) What is the role of each of the following organisms in the food web?
 d) Which one of the listed organisms in (c) above will have the least energy for any food chain considered?
 e) From the food web in (b) construct any 2 food chains.
 f) What would happen if the chameleon is removed from the web?
7. a) Describe the process urine formation
 b) What is the role played by
 i) insulin
 ii) Glucagon in the body
8. a) Describe the digestion of
 i) proteins
 ii) Starch in the human alimentary canal
 b) How is the ileum suited for its functions?
9. a) Describe the adaptations of the following plants to their habitats
 i) Xerophytes
 ii) Hydrophytes
 b) Describe an experiment to show that transpiration occurs

wer all questions

10. In humans the blood circulatory and lymphatic systems transport body fluids.
- Outline the functions of the lymphatic system
 - Explain the changes that occur in the composition of blood as it passes through capillaries of the following parts of the body.
 - Lungs
 - Liver
 - Kidneys
11. a) What is meant by the following terms.
- Allele
 - Gene
 - genotype
 - Phenotype
 - Linkage
 - Discontinuous variation
 - Discontinuous variation
- b) In a breeding experiment when plants with red flowers were crossed , a total of 898 plants were produced out of which 325 had white flowers.
- what was the recessive character
 - what was the genotype of the parents'
 - Using suitable symbols show the experiment phenotypic and genotypic ratios in the experiment.
 - Were the observed results in agreement with laws of monohybrid inheritance? Show your working.
12. a) Define the following terms:
- Haemolysis
 - Crenation
 - Plasmolysis
 - Osmosis
 - Diffusion

b) An experiment was carried out to investigate the effect of sodium chloride solution on red blood cells. The red blood cells were placed in sodium chloride solutions of different concentrations and some red blood cells burst in the solution. The percentage of cells which burst in each solution was determined and the results were recorded in table I .

Table

Sodium chloride concentration (g/100cm ³)	Percentage of red blood cells which burst
0.33	100
0.36	91
0.38	82
0.39	69
0.42	30
0.44	15
0.48	0

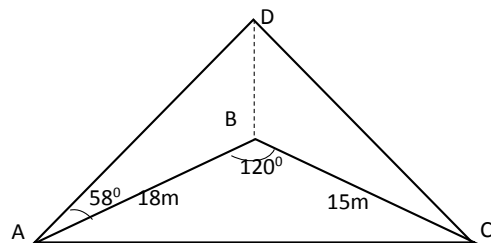
- (a) Draw a labeled diagram of a moving coil galvanometer and describe how it works.
- (b) A galvanometer has a coil of resistance 20 Ohms and gives a full scale deflection when a current of 50mA passes through it. Describe how the galvanometer is converted into an ammeter that can measure current up to 2A
- (c) What are the qualities of
- a good voltmeter
 - a good ammeter
- (d) An a.c electric power generator produces 30kw of power at 240V. The power is to be transmitted to a home a total resistance of 40w.
- Find the power that will be lost on the way.
 - Find the power that will be available for use at the home.
 - Describe better ways of transmitting power to the home with minimum power loss.
1. a (i) Explain why sleeping on a sponge mattress feels more comfortable than sleeping on a hard board. Explain the advantage of them having desert feet.
- (b) A diver sinks to a depth of 5m in a sea water of density 1200kgm⁻³. Given that atmospheric pressure is 103,000 pa, find the pressure experienced by the diver.
- (c) Describe the working of the hydraulic car brakes
- (d) Describe an experiment to find the centre of gravity of an irregular sheet of metal.
2. (a) Describe how x-rays are used to examine a broken bone in the hand.
- (b) Give three differences between X-rays and alpha particles.
- (c) i) The X – rays produced in an x-ray tube have frequency of 10¹⁷HZ. Calculate the wave length of the x-rays.
- ii) Distinguish between hard X-rays and soft X-rays
- (d) i) What are the conditions necessary for a nuclear fusion to take place.
- ii) What is meant by critical mass.
3. (a) describe the three forms of equilibrium
- (b) A uniform beam 6m long weighting 2,000N and supported at its ends carries a weight of 7,500N at a distance of 2m from one end.
- Sketch a diagram clearly showing all the forces acting on the beam .
 - Find the reactions (forces) of the supports.
- (c) Give two examples each of first class, second class and third class levers.
- (d) A cyclist and his bicycle have a total mass of 100kg. He is initially riding at a velocity of 15ms⁻¹. Then he accelerates uniformly at a rate constant

- (i). Find how much money one would pay for the phone by
- (a). Cash purchase (b). Hire purchase
- (ii). After hire purchase, the phone was sold at 380,000/=. What was the percentageloss?

16. Out of a total of 130 families, it was found that 75 owned cars, 70 possessed washing machines and 90 had television sets (TVs). 40 families owned cars and washing machines. 35 had washing machines and TV sets. And 50 owned cars and TV sets. With a help of a Venn diagram, calculate

- (i). the number of families that owned all three
- (ii). the number of families that owned TV sets only
- (iii). what percentage of the total families owned washing machines?
- (iv). If a family is picked at random, what is the probability that a family had two items.

17.



From the figure above, points A, B and C are on level ground. Point D is vertically above point B. Angle ABC = 120° , and angle DAB = 58° , AB = 18m and BC = 15m. Determine;

- (i). the height BD
- (ii). the angle of elevation of D from C.
- (iv). length AC

END

- (i) Explain why red blood cells burst when placed in some solutions of sodium chloride
- (ii) In the graph papers provided, plot a graph of percentage of red blood cells which burst against the sodium chloride concentration.
- (iii) From your graph, determine the concentration of sodium chloride solution in which the burst cells were equal to the intact cells.
1. 0.33g/cm^3
2. 0.48g/cm^3
- (iv) Explain what would happen to the red blood cells if they were placed in a sodium chloride solution of 0.5g/cm^3

13. The table below shows the amount of water collected when 50cm^3 of water was added to 100cm^3 of dry soil samples A and B and a mixture containing equal volumes of soil samples A and B. Study it carefully and answer the questions that follow.

Soil sample	Amount of water added	Amount of water collected
100cm^3 of A	50cm^3	5cm^3
100cm^3 of B	50cm^3	40cm^3
Mixture of 50cm^3 of A and 50cm^3 of B	50cm^3	25cm^3

(a) Calculate the volume of water in each of the soil samples.

(i) Soil sample A

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(ii) soil sample B:

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(iii) Mixture of soil samples a and B

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(b) Calculate the percentage of water retained in each of the soil samples

(i) Soil sample A

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(ii) soil sample B:

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(iii) Mixture of soil samples a and B

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(c) Which of the soil samples would be best to a farmer? Give two reasons for your answer

soil sample :

Reasons:

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14. The table below shows the effect of increasing temperature on the rate of an enzyme controlled reaction:

Temperature / °C	0	10	20	30	40	50	60	70
Rate of reaction (arbitrary units)	0.0	1.1	1.8	4.3	8.8	2.8	0.0	0.0

a) Represent the information in a suitable graphical form.

b) Describe the shape of the graph.

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(ii). the value of $f(-4)$.

(b). If $g(x) = 7x + 15$ and $h(x) = 2x^2$. Find x such that $g(x) = h(x)$

(c). It is given that $f(x) = \frac{x+10}{x-2}$ Find the value of x for which the function is undefined.

16. A cyclist set off from Bushenyi at 4:00 Am at a speed of 25kmh^{-1} to go to Fortportal

150km away. A taxi (kamunye) also sets off from Bushenyi after $3\frac{1}{2}$ hrs later at a speed of 75 kmh^{-1} to go to fort portal.

Find;

(i). the time at which the taxi sets for the journey.

(ii). the distance from Bushenyi when the taxi overtakes the cyclist.

(iii). the time when the taxi overtakes the cyclist

(iv). the time the cyclist reached fort portal

17 (a). On imported goods, customs duty and value added tax were levied as shown in the table below.

Custom duty	20% of the value of the goods
Value added tax	10% of (value of the goods + customs duty)

Find the total amount which was paid as tax for importing a TV set valued at Sh. 700,000.

(b). Study the following advert for Nokia phone company

NOKIA SALES TERMS

Either

CASH PURCHASE: sh.400, 000 and 10% discount.

OR

HIRE PURCHASE : sh 50,000 and 8 monthly installment of 45,000/=

Using scales of 1cm to 10km and 1cm to 30 minutes on the vertical and horizontal axes respectively:

(a) Draw distance time graphs showing the routes of the two vehicles.
(08 marks)

(b) Using your graphs determine the

(i) Distance between the two vehicles after 2 hours.

iii) Difference in time of arrival at respective towns. (04 marks)

14. A quantity **P** is partly constant and partly varies as the square of **n**. when **P** = 2, **n** = 40 and when **P** = 3, **n** = 65.

a) Form an equation relating **P** and **n**.
(08marks)

b) Determine the value of **P** when **n** = 100.
(04marks)

15.a) A bag contains 3 green and 2 red balls. Two balls are randomly selected from the bag without replacement. Find the probability that:

(i). Both are of same color.

(ii). The second ball is red.

(iii). They are of different colors.

(b). A regular octahedron, whose faces are numbered 1 to 8 is thrown together with a coin. Show the possible outcomes in a table. Find the probability of getting;

(i). "T" with prime number,

(ii). "H" and a number less than 4.

(a). Given that $y = ax + \frac{b}{x}$ and that when $x = 1$, $y = 17$ and when $x=3$, $y=19$.

Find:

(i). the values of the constants a and b .

(ii). y when $x=5$

(iii). the value of x , other than 3 for which $y = 19$.

(b). Given that $\frac{15}{5\sqrt{2}-3\sqrt{3}} = a\sqrt{2} + b\sqrt{5}$, Find the values of a and b .

15. (a). The function f is defined by $f(x) = \frac{27}{x+a^2}$

Given that $f(2) = 1$

Find

(i). the value of a

c) Explain the behavior of the graph:

(i) At 0°C :

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(ii) from 20°C to 30°C

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(iii) at 40°C

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(iv) From 45°C to 55°C

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15. The table below shows results of an investigation carried out on a fresh water plant. The plant was placed under water which had its carbon dioxide concentration varied as the number of oxygen bubbles evolved per minute by the plant was recorded. The investigation was carried out under sunlight at 25°C .

Carbon dioxide concentration (percentage by volume)	0.00	0.02	0.08	0.14	0.18
Number of oxygen bubbles per minute	0	4	20	24	24

a) What was the aim of the experiment?

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b) Represent the information in the table graphically.

c) Using the information, explain the observations:

(i) at carbon dioxide concentration of 0.00

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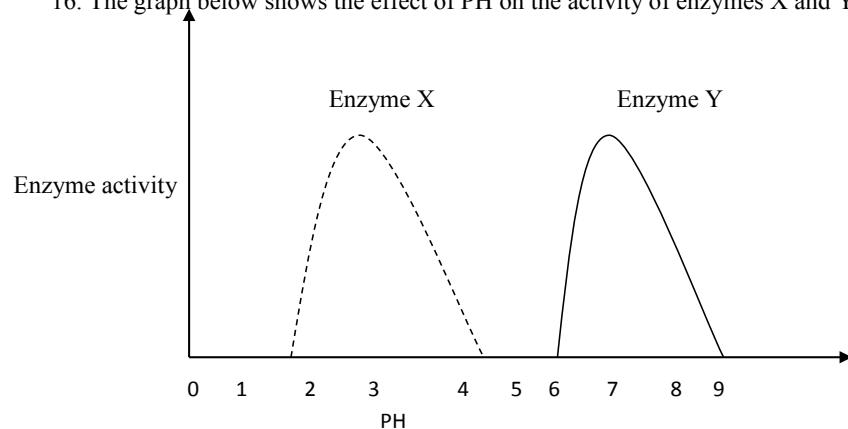
(ii) Between carbon dioxide concentration of 0.02 and 0.18

d) Suggest an explanation for what would be observed in the experiment if the:

(i) carbon dioxide concentration was increased to 0.20

(ii) Temperature was lowered to 5°C

16. The graph below shows the effect of PH on the activity of enzymes X and Y



11. (a) Calculate the simple interest on Shs. 990,000 for 8 months at a rate of $5\frac{1}{2}\%$ per annum. (03 marks)

(b) The income tax rates of a certain country are shown in the table below;

Taxable Income (Shs)	Rate (%)
01 - 200,000	6
200,001- 500,000	13
500,001 - 900,000	20
900,000 and above	30

(i) Calculate the Income tax an employee pays if the employee's taxable income is Ug.Shs 1,170,000. (05marks)

(ii) Given that the employees' untaxed allowances is Shs 140,750/=. Find the employee's net income. (04marks)

12. In a triangle OPQ, point R lies on line PQ such that $3\mathbf{PR} = \mathbf{PQ}$.

Point S lies on line $\mathbf{OQ}$ and $\mathbf{OS} = \frac{1}{4}\mathbf{OQ}$, while T lies on line $\mathbf{OR}$ such

that $\mathbf{OT} = \mathbf{TR}$.

If $\mathbf{OQ} = \mathbf{q}$ and $\mathbf{OP} = \mathbf{p}$ express in terms of $\mathbf{p}$ and $\mathbf{q}$ the vectors.

(a) (i) $\mathbf{PQ}$

(ii) $\mathbf{OR}$

(iii) $\mathbf{PT}$

(08marks)

(b) Show that $\mathbf{PT} : \mathbf{TS} = 2:1$.

(04marks)

13. A lorry set off from Tororo at 0730 hours at a steady speed of 40km/hr to Kampala, a distance of 180km away. After travelling for 2 hours it stopped and rested for $1\frac{1}{2}$ hrs, then continued at a steady speed of 50km/hr for the rest of its journey. A car also set off from Kampala to Tororo at the same time as the lorry at a steady speed of 60km/hr but suddenly reduced its speed after 2 hours to 15km/hr due to some mechanical fault for the remaining journey.

S.4 MATHEMATICS HOLIDAY WORK

Attempt All Questions

1. The operations Δ and $\rightarrow$ are defined by $x \Delta y = x^2 + y^2$ and $x \rightarrow y = xy$.
Find the value of $2 \Delta (2 \rightarrow 5)$. (4 marks)
2. Form a quadratic equation whose roots are $-\frac{1}{3}$ and $1\frac{1}{2}$. (4 marks)
3. A circle has a radius of 12cm. Two chords of length 16cm and 20cm are parallel. How far apart are they if they are on the same side of the centre of the circle? (4 marks)
4. Find the value of $\left(\frac{\sin 60^\circ}{\sin 30^\circ} + \tan 60^\circ\right)$ without using a table or a calculator.
(leave your answer in surd form). (4 marks)
5. Express $15 \leq 3(x + 2) \leq 36$ in the form $a \leq x \leq b$. (4 marks)
6. 10022 is a number in base three. The same number is represented as 155y. Find the value of y.
7. A line passes through the points (2,6) and (-1,5). Find the coordinates of the point of intersection of the line and the y-axis.
8. If the rate of interest of a borrower is increased from 7% to 12%, he pays Sh.3500 more in simple interest in one year. How much money did he borrow?
9. A boy spends $\frac{1}{3}$ of his weekly allowance on transport and $\frac{3}{4}$ of the remainder on food. If he is left with a balance of Sh1000, how much is his weekly allowance.
10. Given that **y** varies inversely as the square of x and that $y = 10$ when $x = 4$, find the value of;
 - i) y when $x = 0.25$
 - ii) x when $y = 5$

a) What is enzyme?

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b) (i) Define the term optimum PH of an enzyme.

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(ii) State the optimum PH for each enzyme

Enzyme X :

Enzyme Y:

c) Account for the observed effect on the rate of enzyme activity of:

(i) the optimum PH for each enzyme

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(ii) deviation from the optimum PH for each enzyme

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d) Considering the enzyme pepsin and salivary amylase, with reason, which one of these enzymes is most likely to be:

(i) Enzyme X:

Reason:

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(ii) Enzyme Y:

Reason:

.....

e) Basing on your answer in (d) above, name the part of the alimentary canal where you would expect to find each enzyme, state the function of each enzyme, and

give the mechanism by which its optimum PH is achieved.

Enzyme	Part of alimentary canal	Function of enzyme	Mechanism to achieve optimum PH
X			
Y			

17. Six identical potato cylinders measuring 2.0cm in length were each placed in a different concentration of sugar solution. After two hours, the potato cylinders were removed from the solutions and remeasured. The table below shows the results.

Concentration of sugar solution mol ⁻¹	Length of potato cylinders after 2 hours (cm)	Differences in length of potato cylinders after 2 hours (cm)
0.1	2.40	
0.2	2.25	
0.3	2.15	
0.4	2.05	
0.5	1.98	
0.6	1.82	

- Complete the table by filling in the difference in length of each potato cylinder after two hours (i.e. length after 2 hours subtract initial length)
- Plot a graph of the differences after 2 hours against concentration of sugar solutions.
- (i) What was the effect of the concentration of the sugar solutions on the length of the potato cylinders?

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- Explain why the concentration of sugar solutions affected the length of the potato cylinders as stated in (c) (i).

7. Study Table II below showing volume of exports of manufactured goods by Zambia (1996-2001) and use it to answer the questions that follow.

Zambia: Manufactured Export goods (in “000s”)

YEAR	EXPORTS
1996	168000
1997	180000
1998	194000
1999	189000
2000	163000
2001	203000

- Calculate the percentage change in volume of manufactured goods exported by Zambia from 1996 to 2001.
- Describe the trend of manufactured exported from Zambia between 1996 and 2001.
- Explain the problems faced by the manufacturing sector in Zambia.
- Outline the benefits of the manufacturing sector to the development of Africa.

HAPPY HOLIDAYS

THE REST OF AFRICA

5. Draw a sketch map of the Republic of South Africa and on it, mark and name:
- Towns: Johannesburg and East London,
 - Rivers: Orange and Vaal,
 - Goldfields: Klerksdorp, Krugersdorp and Witwatersrand.
- b) Describe the method used in mining gold in any one of the gold fields in (a)(iii) above.
- c) Explain the conditions which have favored gold mining in the Republic of South Africa.
- d) Outline the effects of gold mining on the environment in the Republic of South Africa.
6. Study Table I below showing fish production in selected countries of West Africa (in “000” tones) and use it to answer questions that follow.

Fish production in selected countries of West Africa

Country	Quantity produced “000” tones
Chad	120
Ivory coast	100
Ghana	220
Mali	120
Mauritania	50
Nigeria	460
Senegal	340

- Draw a bar graph to represent the information contained in the table.
 - How much fish was caught by landlocked countries?
- b) Describe the
- Physical conditions that led to the development of the fishing industry indicated in the table.
 - Any two methods used in fishing preservation in the country you have selected.
- c) Explain the contribution of the fishing industry to the development of West Africa.
- d) Outline the difficulties faced in the marketing of fish in West Africa.

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d)i) From your graph, determine the concentration of the sugar solution that would give no difference in length of a potato cylinder.

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(ii) Explain what happens in a potato cylinder when no change in length occurs

e) suggest two other observations, other than change in size that would be made on the potato cylinders.

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18. The table below shows the effect of wind, still air and stomatal opening on the rate of transpiration of a plant in milligrams of water lost per hour per dm². Study the table and answer the questions that follow:

Stomatal opening (um)		1	2	3	4	5	6	7
Rate of transpiration (milligrams of water lost per hour per dm ²)	Wind	40	63	74	86	94	110	130
	Still air	0	6	12	19	23	27	30

- a) Plot a graph of rate of transpiration against stomatal opening

- b) Explain how stomatal opening affects transpiration rate

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- c) Explain the difference in the rate of transpiration in wind and still air

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- d) Name the three factors that affect the rate of transpiration.

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19. A biologist collected data from an athlete during and after a period of running of 6 minutes. The data is shown in the table below:

Time/ minutes	0	4	8	12	16	20	30	50	60	70
Concentration of lactic acid in blood (mg/100cm ³)	3	28	50	40	33	26	12	5	3	3

- a) Represent the information graphically.
- b) Describe the change in concentration of lactic acid over the 70 minutes .

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- c) Explain the change in lactic acid concentration in blood between
- i) 2-6 minutes

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9. Study Table III: Area under Cropland in the South (Mississippi)

Type of crop	Area under cropland '000s (Ha)
Soyabean	1,012
Cotton	704
Hay	286
Cereals	154
Others	44
Total	2,200

Adapted: Hyghes, D. Chel (1984) North America: A study in Development: long man

- a) Draw a pie chart to represent the information in the table.
- b) Why has more land been used for the growing of soya bean than cotton?
- c) Mention any other two states in the South where cotton is grown.
- d) Describe the condition which has favored the growing of cotton in the South.
- e) Explain the contribution of cotton growing to the South.

REGION II: RHINELANDS

4. Study table IV provided below and use it to answer the questions that follow.
- Commodities which passed through Rotterdam Port (1973)

Community	Tonnage (metric tones)	Percentage	Degrees
Mineral oils	-	69.5	250
Ores	-	9.4	-
Cereals	7.5	2.4	09
Coal	-	1.9	-
Fertilizers	5.5	1.8	06
Other goods	46.5	14.8	-
Total	309.5	100	360

- a) Calculate the tonnage of;
- (i) Mineral oils
- (ii) Ore
- (iii) Coal
- b) Draw a pie-chart to show the commodities handled by Rotterdam.
- c) i. Name any three countries whose imports and exports are handled by Rotterdam Port
- ii. Describe the factors that led to the growth of Rotterdam into one of the world's largest port
- d) Mention the problems facing Rotterdam as an international port.

- a) Draw a pie-chart to represent the relative importance of each means of transport.
 - b) Identify the means of transport which is:
 - ii) Most popular,
 - iii) Least popular on Manhattan Island
 - c) Outline the problems faced by the transport sector in New York City.
 - d) Explain the effects of the transport sector on the environment in New York.
3. Study table III below showing the average yield of yield of cereals per hectare in Canada (1986 - 96) and answer the questions that follow.

Table III: Canada: Average yield of Cereals (Kgs per hectare)

Year	Average yield (kgs/ ha)
1986 – 88	2,238
1988 – 90	2,200
1990 – 92	2,531
1992 - 94	2,531
1994 - 96	2,566
	2,702

Adapted from World Resources Series: (1990 - 1999) A guide to the Guide the Global Environment:

- a) Draw a bar graph to show the information given in the table.
- b) Describe the:
 - i) Trend of the average yield of cereals in Canada,
 - ii) Important cereal production to the people of Canada.
- c) Name any two:
 - i) Cereals grown in Canada,
 - ii) Important cereal growing provinces in Canada.
- d) Explain the benefits of cereal production to the people of Canada.

(ii) 10 -20 Minutes

- d) What are the effects of excessive accumulation of lactic acid in the body?

20. A person fasted overnight and then swallowed 75g of glucose. The table below shows the resulting changes in the concentrations of insulin and glucose in the blood after swallowing the glucose, monitored at intervals of 20 minutes for the next 160 minutes. the results were as shown in the following table:

Time/ minutes	Concentration of substance in blood(arbitrary units)	
	Glucose	Insulin
0	90	30
20	100	30
40	110	50
60	120	70
80	130	90
100	120	110
120	110	90
140	100	70
160	90	50

- a) Represent the above data on a graph paper
- b) Explain the changes in the concentrations of glucose and insulin in blood from:
 - (i) 20 minutes to 60 minutes

(ii) 100 minutes to 140 minutes

END

ST CHARLES LWANGA INTERNATIONAL SCHOOL KAKIRI

ENGLISH LANGUAGE PAPER 1

HOLIDAY PACKAGE

INSTRUCTIONS TO CANDIDATES:

- **Answer all questions**
- Section **A**: You are advised to spend **10-15** minutes preparing, **30** minutes writing and **10-15** minutes checking and correcting your work.
- Section **B**: You are advised to spend **5-10** minutes preparing, **40** minutes writing and about **5-10** minutes checking and correcting your work.

SECTION A

For the following question number 1, write a composition of 250-300 words. (20 marks)

1. Imagine you are a trusted student by your Headteacher. Write a report to him/her on why students fail English in your class.

SECTION B.

write a composition of **500-600** words. (20 marks)

2. Write an account of a personal experience ending your composition with ".....that is when I came to realize that a friend in need is a friend indeed"
3. Describe an exciting adventure you and your close friend had in an East African village or town under the title, "An unforgettable Experience"
4. Write a story beginning, "We had hardly fallen asleep when the gunfire tore the silent night...."
5. Write a composition describing an interesting place you visited as a child.
6. Write a story based on the title, "one man's meat is another man's poison"
7. Life of a school pupil is very challenging. Do you agree or disagree? Give your views.

ST CHARLES LWANGA INTERNATIONAL SCHOOL KAKIRI

HOLIDAY PACKAGE FOR S.4

GEOGRAPHY PAPER TWO

Instructions to Candidates

Answer all questions,

Poor handwriting and unnecessary crossings may lead to loss of marks

STUDIES IN DEVELOPMENT

REGION I: NORTH AMERICA

1. a) Draw a sketch map of North America and on it mark and name the following.
 - i. Highlands : coastal ranges, Sierra Nevada mountains, Rock Mountains, Appalachian mountains
 - ii. The great lakes
 - iii. Coastal features: Hudson Bay, Gulf of Mexico.
 - iv. Pacific ocean
 - b) Describe the process that was responsible for the formation of the Sierra Nevada Mountains.
 - c) Explain the effects of the mountain landscape on the economic development of North America.
 - d) Suggest the policies that can be undertaken to utilize and conserve mountain ecosystem in North America.
2. Study table III below showing means of transport used to enter Manhattan Island in New York City and answer the questions that follow.

Means of transport	Percentage
Train	09
Ferry	02
Car, Lorry, Taxi	13
Subway (Underground train)	70
Bus	06

SECTION C: LIFE

- 7(a) Explain the causes of unhappiness in society today **10mks**
- (b) How can the Christian teaching help to bring happiness to HIV/AIDS patients
- 8 (a) What rituals were carried out in African traditional society to show that there is life after death? **10mks**
- (b) Explain the differences the Christian and traditional African ways of understanding life after death **10mks**
- 9 (a) What should you do to achieve a successful life? **10mks**
- (b) Why do Christians regard Jesus as a successful person? **10mks**

SECTION D: MAN AND WOMAN

- 10(a) What changes have taken place in the pattern of a family setting today? **8mks**
- (b) What bible teaching can help the family members to remain united? **12mks**
- 11 (a) Show how women were discriminated in the Old Testament? **10mks**
- (b) What is the church doing to support women have equal opportunities with men?
- 12 (a) Describe the customary marriage formalities/practices carried out in a traditional society you know
- (b) Show how Hosea's marriage to Gomer helps Christian marriages today? **10mks**

SECTION E: MAN'S RESPONSE TO GOD THROUGH FAITH AND LOVE

- 13 (a) How did Clement of Alexandria and st. Augustine of Hippo search for God? **10mks**
- (b) In what ways should modern Christians search for God? **10mks**
- 14(a) Explain the dangers of witch craft and magic on life in the Traditional African society **10mks**
- (b) With examples show how people evaded God in the Old Testament **10mks**
- 15(a) How did Christians in the early church show care in society? **10mks**
- (b) Explain the problems a Christian faces when he/she gets involved in helping society members

10mks

ST CHARLES LWANGA INTERNATIONAL SCHOOL KAKIRI

S.4 CHEMISTRY HOLIDAY PACKAGE

Answer all questions

- 1 a) i) state then conditions under which hydrogen peroxide can produce a reasonable quantity of oxygen at room temperature. (01mk)
- ii) Give a reason for your statement in (a) (i) (01mk)
- iii) Write equation for the reaction of hydrogen peroxide to produce oxygen. (01¹/₂mks)
- b) Write in the space provided, the class of each of the following oxides. (01¹/₂mks)
- i) Carbon monoxide
- ii) Zinc oxide
- iii) Nitrogen dioxide.....
2. Name a pair of substances in each case, which can form a mixture that can be separated each of the following methods. (1mk each)
- a) A magnet.
- b) Fractional distillation.
- c) Paper chromatography.
- d) Fractional crystallisation.
- e) Solvent extract.
3. The full symbol of nitrogen atom is ¹⁴₇N.
- a) State the number of neutrons in the nitrogen atom. (1/2mk)
- b) Write;
- i) the electronic configuration of nitrogen. (1/2mk)
- ii) the structural formula of nitrogen. (01mk)
- c) suggest a reason why nitrogen is generally un reactive. (01mk)
- d) state one way in which the concentration of nitrogen in the atmosphere is;
- i) increased (01mk)
- ii) Reduced. (01mk)
4. a) The PH of each of the dilute solutions of potassium carbonate, lemon juice and ammonium nitrate was measured. Identify the substance which had a solution with PH value that was;
- i) Around 1 to 2.
- ii) Well above 7.
- iii) around 4 to 5 (01 mk each)
- b) 15cm³ of a 2M sodium sulphate solution was diluted with distilled water to make 200.0cm³ of a resultant solution. Calculate the concentration of the resultant solution in mol dm⁻³ with respect to sodium ions. (03mks)
5. a) To a solution of ammonium sulphate was added barium nitrate solution, which had been acidified with nitric acid.
- i) State what was observed. (01mk)
- ii) Write an equation for the reaction that took place. (01¹/₂mks)
- b) The experimental procedure in (a) was repeated using sodium sulphite solution instead of the solution of ammonium sulphate.

ST CHARLES LWANGA INTERNATIONAL SCHOOL KAKIRI

223/1 CHRISTIAN RELIGIOUS EDUCATION

HOLIDAY PACKAGE

Instructions to Candidates

- Candidates **must** answer **ALL** questions,
- All questions carry equal marks

SECTION A: MAN IN A CHANGING SOCIETY

1(a) How has the introduction of money affected people's living in Uganda today? **12mks**

(b) Show the influence of money on the youths today **8mks**

2 (a) What were the benefits of communal work in traditional Africa? **10mks**

(b) Give the New Testament about work. **10mks**

3 If St. Augustine was to live in Uganda today, he would disapprove many ways Ugandans spend their leisure time.

(a) Why would he disapprove them? **10mk**

(b) As an S.4 Christian student suggest ways through which a young Christian would spend his/her leisure time meaningfully. **10mks**

SECTION B: ORDER AND FREEDOM

4(a) Who were the underprivileged in traditional African society? **10mks**

(b) How does the church help the underprivileged to fit in society today? **10mks**

5(a) How did the early missionaries serve the communities in East Africa? **10mks**

(b) Jesus washed the feet of his disciples at the last supper. What does this action teach Ugandan leaders about authority?
10mks

6 (a) Show the ways in which the traditional African loyalty created security for the community.
10mks

(b) How did the Israelites show disloyalty to God in the Old Testament? **10mks**

i) State what was observed. (01mk)

ii) Briefly explain your observation in (b)(i) (no equation is required) (01½mks)

6. a) Write the name of the hydrocarbon with the formula; (01mk @)

i) C₂H₄

ii) C₂H₆

b) i) Name one reagent which can be used to distinguish between C₂H₄ and C₂H₆ (01mk)

ii) State what would be observed in each case if the hydrocarbons you have named in (a) were treated separately with the reagent you have named in (b)(i) (01½mks)

iii) Give a reason for your observation in (b)(ii) (½mk)

7. a) Lead II hydroxide was heated strongly and allowed to cool. State what was observed. (02mks)

b) To the residue of the reaction in (a) was added coke and the mixture heated strongly.

i) Write an equation for the reaction that took place. (01½mks)

ii) Name a nitrogen containing compound that would react with the residue states in (b)(i) in the same way as coke. (½mk)

8. When 5.95g of a hydrated salt, XCl₂.nH₂O, with formula mass of 238 was heated to constant mass, 3.25g of the anhydrous salt was obtained.

a) Calculate the number of moles of water of crystallisation in the hydrated salt. (H=1, O= 16) (04mks)

b) Determine the atomic mass of X. (Cl = 35.5) (02mks)

9.a) Dilute ammonia was added dropwise until in excess to a solution containing aluminium ions.

Write an ionic equation for the reaction that took place. (01½mks)

b) To the mixture in (a) was added excess dilute sodium hydroxide solution and the resultant mixture shaken well.

i) State what was observed. (01mk)

ii) write the formula of the anion in the resultant mixture. (01mk)

c) Name the metal ion that behaves in a similar way to aluminium ion. (½mk)

10. a) Chlorine was bubbled through a saturated potassium iodide solution.

i) State what was observed. (01mk)

ii) give a reason for your observation in (a) (i)

b). Write an equation for the reaction that would take place if;

i) Dry chlorine was passed over heated iron wire. (01½mks)

ii) Chlorine was bubbled into a dilute sodium hydroxide solution. (01½mks)

iii) Chlorine was bubbled into a concentrated solution of sodium hydroxide. (01½mks)

SECTION B

11. a) i) draw a labelled diagram of the set up of apparatus that can be used to prepare carbon dioxide using marble chips and write equation for the reaction that leads to formation of carbon dioxide (04½mks)

Net purchases	260,000
Closing stock	1,200,000
Expenses	44,000
Mark-up	20%

Required: calculate

- | | | |
|-------|------------------------|-----------|
| (i) | Cost of sales | (3 marks) |
| (ii) | Turnover | (3 marks) |
| (iii) | Average stock | (3 marks) |
| (iv) | Rate of stock turnover | (3 marks) |
| (v) | Net profit / net loss | (4 marks) |

6. (a) Give four differences between home trade and foreign trade

(b). Explain six measures that are being used by the government of Uganda to control foreign trade

7. (a) Distinguish between the following types of shares;

- (i) Cumulative preference shares and non-cumulative preference shares
- (ii) Redeemable preference shares and irredeemable preference shares

(b) Give six advantages of limited companies over partnership as forms of business organizations

8. (a) Advise trader on any five factors that should be considered when choosing a means of transport

(b) State five advantages of containerization to traders

9. a) Draw a diagram showing the division of commerce (8 marks)

b) What six factors will influence a buyer to choose a particular commodity in the market? (12 marks)

10. a) Explain the following terms as used in transport.

- | | | |
|-------|--------------------------------|-----------|
| (i) | Full container load (FCL) | (2 marks) |
| (ii) | Less than container load (LCL) | (2 marks) |
| (iii) | Dry-port | (2 marks) |
| (iv) | Liner conferences | (2 marks) |
| (v) | Charter party | (2 marks) |

b) Under what six conditions may sea transport be preferred to other forms of transport? (10 marks)

ii) Name one common dry agent that cannot be used for drying carbon dioxide and give a reason for your answer. (01½mks)

b) explain the reaction of carbon dioxide with aqueous sodium hydroxide. (06½mks)

c) State;

i) What would be observed and write an ionic equation for the reaction that would take place if aqueous solution of calcium hydrogen carbonate was heated. (02mks)

ii) one industrial use of carbon dioxide. (½mk)

12. a) i) Describe how a dry sample of calcium nitrate can be prepared from calcium carbonate. (06mks)

ii) state what would be observed and write equation for the reaction that would take place if calcium nitrate was strongly heated. (04mks)

b) During the preparation of calcium chloride, calcium hydroxide reacted with hydrochloric acid according to the following equation.



Calculate the volume of a solution containing 2 mol dm⁻³ of hydrochloric acid that reacted exactly with 5.55g of calcium hydroxide. (H = 1, O=16, Ca=40) (04mks)

c) A small sample of calcium chloride was left exposed to air for some time.

State;

i) What was observed. (½mk)

ii) the practical application of the property of calcium chloride which led to the observation stated in (c)(i). (½mk)

13. a) Name two substances from which ammonia can be synthesised and write equation for the reaction leading to the formation of ammonia. (02½mks)

b) state two conditions under which ammonia can react with oxygen and write equation in each case to show the reaction that takes place. (04½mks)

c) The product in one of the reactions in (b) is used in the production of nitric acid on a large scale. Identify the product and write equations only to show how it is converted into nitric acid. (03mks)

d) Explain the reaction of nitric acid with copper. (05mks)

14. a) Distinguish between the term electrolyte and electrodes. (02mks)

b) State;

i) What is meant by the term electrolysis. (01mk)

ii) Two factors which can cause formation of products during electrolysis to proceed contrary to the electrochemical series.

iii) Illustrate your answer in (b)(ii) using electrolysis of copper II chloride. (06mks)

c) i) Briefly describe how copper is purified by electrolysis. (no equation is required) (04mks)

ii) State one application of electrolysis other than purification of copper. (01mk)

S.4 COMMERCE HOLIDAY WORK 2018

Attempt All Questions

1. (a) Define the following terms as used in commerce

- (i) Liabilities (2 marks)
 (ii) stock taking (2 marks)

b) Given the following information:

Stock on 1/1/2009	43,430,000
Net purchases	312,290,000
Mark up	25%
Stock on 31 st 12.2009	26,000,000
Expenses for the year	35,850,000

Calculate:

- (i) Average stock (4 marks)
 (ii) Rate of stock turn (4 marks)
 (iii) Gross profit (4 marks)
 (iv) Net profit (4 marks)

2. The following information was extracted from the books of accounts of a trader

Capital	Shs1,000,000
Total cost of sales	Shs.960,000
Average mark up	20%
Expenses	shs80,000

Calculate the trader's:

- (i) Turnover (4 Marks)
 (ii) Gross profit (4 marks)
 (iii) Net profit (4 marks)
 (iv) Margin (4 marks)
 (v) Rate of return on capital (4 marks)

3. The following records were extracted from the books of a trade as at 31st December 2011

Stock on 1 st January 2011	11,400,000
Purchases	92,000,000
Sales	106,940,000
Returns outwards	3,400,000
Returns inwards	1,600,000
Overheads	13,400,000

Stock on 31st December 2011

17,400,000

Calculate the:

- (i) Cost of sales (4 marks)
 (ii) Net sales (4 marks)
 (iii) Mark up at cost (4 marks)
 (iv) Net profit (4 marks)
 (v) Rate of stock turn (4 marks)

Define the following terms as used in business calculations:

- (i) Capital (2 marks)
 (ii) Debtors (2 marks)
 (iii) Current assets (2 marks)
 (iv) Working capital (2 marks)

b) Explain six methods of increasing profits of a retail business. (12 marks)

31. (a) Give any four forms of transport in your country. (4 marks)

(b) Explain the role played by transport in your country. (16 marks)

4. The following records were extracted from the books of a trade as at 31st December 2011

Stock on 1 st January 2011	11,400,000
Purchases	92,000,000
Sales	106,940,000
Returns outwards	3,400,000
Returns inwards	1,600,000
Overheads	13,400,000
Stock on 31 st December 2011	17,400,000

Calculate the:

- (i) Cost of sales (4 marks)
 (ii) Net sales (4 marks)
 (iii) Mark up at cost (4 marks)
 (iv) Net profit (4 marks)
 (v) Rate of stock turn (4 marks)

5. a) Define the term stock –taking as used in business. (2 marks)

b) Rebbecca trader had the following information as at 31st December 2013.