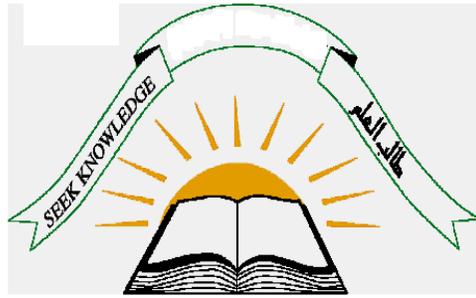


YEMEN SECONDARY SCHOOL



April 28

PACKAGE 2

2020

ANSWER ALL QUESTIONS IN THIS PACKAGE BASED ON YOUR
COMBINATION

COVID-19

**YEMEN SECONDARY SCHOOL
FORM V COVID -19 PACKAGE (SECOND PHASE)
GENERAL STUDY**

INSTRUCTIONS

- Answer all questions.

1. Corruption is the serious social malaise that needs to be fought by every citizen. Discuss by using six points.
2. Explain philosophical ideas of Aristotle in Democracy and Education.
3. Use six points to discuss major environmental cross-cutting problems in Tanzania.
4. Analyse different institutions that perpetuate gender discrimination in Tanzania.
5. Explain the ways through which **covid-19** pandemic can be transmitted.
6. Distinguish between idealism and Materialism; take an example from your society.
7. Explain philosophical ideas of Karl Max.
8. Identify socio-cultural practices which can be prevented because of their gender biasness.
9. Give a good elaboration on the causes of land pollution in developing countries. (six points).
10. Desertification can be controlled through a number of means. Show six of them to support your answer.

CHEMISTRY

1. What is Atomic spectrum?
 - b) Calculate the amount of energy, frequency, wavelength and wave number of the first member in the continuum spectrum.
2. Explain by giving reasons, which of the following quantum numbers are not possible?
 - a) $n=0$ $l=0$ $ms=1/2$
 - b) $n=1$ $l=0$ $ml=0$ $ms=1/2$
 - c) $n=1$ $l=1$ $ml=0$ $ms=1/2$
 - d) $n=2$ $l=1$ $ml=0$ $ms=1/2$
 - e) $n=3$ $l=3$ $ml=-3$ $ms=1/2$
 - f) $n=3$ $l=1$ $ml=0$ $ms=1/2$
3. How many electrons are there in an atom having the following quantum number?
 - a) $n=5$ $ms=1/2$
 - b) $n=3$ $l=0$
4. Draw the electronic configuration of the following elements.
 - (a) Mn
 - (b) Cr
 - (c) Cu^+
 - (d) Ni
 - (e) Fe^{2+}
5. a) State: (i) Boyle's law
(ii) Charles's law
(iii) Dalton's law of partial pressure.
 - b) In a certain mixture of gases it was experimentally found that, the mixture contained 30% H_2 , 40% NH_3 and the remaining percentage was N_2 . If the total pressure exerted into the wall of the container was $9.80 \times 10^4 \text{Nm}^{-2}$.
 - i) What is the partial pressure of each gas?
 - ii) What changes would occur to the partial pressure of hydrogen and nitrogen if ammonia was removed by the addition of solid phosphorus (V) oxide?
 - c) If 5.0g sample of water is vapourized completely into a 10l container at 150°C . Calculate the pressure of the water vapour in this container at 150°C .
6. a) Give four postulates of the kinetic theory of gases
 - b) Given that $PV = \frac{1}{3}mN\bar{C}^2$, calculate the kinetic energy of 1mole of an ideal gas at 27°C

- c) Air is a mixture of gases such as oxygen, nitrogen and carbon dioxide and some noble gases. Calculate the root mean square speed of the three named gases at room temperature (25°C)
7. a) Give meaning to the following :
 i) Molar volume of the gas at s.t.p
 ii) Graham's law of diffusion
 iii) Effusion of a gas.
- b) At standard temperature and pressure, 1 mole of oxygen gas takes 250 seconds to diffuse through a pinhole of the container. Under identical conditions, 1 mole of unknown gas W takes 177 seconds to diffuse. Calculate the relative molecular mass of the unknown gas.
8. a) What is organic Chemistry?
 b) Describe any five sources of organic compounds
 c) Explain any four importance of studying organic Chemistry
9. Complete the following reactions by showing mechanism clearly.
- i) $\text{CH}_2 = \text{CH}_2 + \text{H}_2\text{O} \xrightarrow{\text{H}^+}$
 ii) $\text{CH}_3\text{CH} = \text{CHCH}_3 + \text{HCl} \xrightarrow{\quad}$
 iii) $\text{CH}_2 = \text{CH}_2 + \text{Cl}_2 \xrightarrow[600^\circ\text{C}]{\text{U.V.}}$
 iv) $\text{CH}_3\text{CH} = \text{CH}_2 + \text{CH}_3\text{NH}_2 \xrightarrow{\text{H}^+}$
 v) $\text{CH}_3\text{CH}_2 - \text{OH} + \text{HBr} \xrightarrow{\quad}$
10. a) Define the following terms and in each case give the sign (+ve and -ve) corresponding to its value.
 i) Standard enthalpy of formation
 ii) Lattice energy
 iii) Standard enthalpy of combustion
 iv) Standard enthalpy of sublimation
- b) The reusable booster rockets of the space shuttle use a mixture of aluminium and Ammonium perchlorate as fuel. The reaction is:-
 $3\text{Al}_{(s)} + 3\text{NH}_4\text{ClO}_{4(s)} \rightarrow \text{Al}_2\text{O}_{3(s)} + \text{AlCl}_{3(g)} + 6\text{H}_2\text{O}_{(g)}$ Calculate ΔH^θ for the reaction given standard enthalpies of formation ΔH^θ_f of the compounds involved as follows:-
- | | | |
|--|---|--------------------------|
| ΔH^θ_f for $\text{NH}_4\text{ClO}_{4(s)}$ | = | -295 KJmol^{-1} |
| ΔH^θ_f for $\text{AlCl}_{3(s)}$ | = | -704 KJmol^{-1} |
| ΔH^θ_f for $\text{Al}_2\text{O}_{3(s)}$ | = | -167 KJmol^{-1} |
| ΔH^θ_f for $\text{H}_2\text{O}_{(g)}$ | = | -242 KJmol^{-1} |
| ΔH^θ_f for $\text{No}_{(g)}$ | = | +90 KJmol^{-1} |
| ΔH^θ_f for $\text{Al}_{(s)}$ | = | 0 KJmol^{-1} |

ENGLISH LANGUAGE

1. what is language? Why do you think language varies? Discuss, giving six reasons.
2. Describe two kinds of pidgin and three characteristics of a pidgin language.
3. code switching is a vital communication tool amongst bilingual speakers. Verify this statement by giving eight purposes for code switching
4. what is note taking? Describe three characteristics of good notes.
5. using appropriate examples from English language describe eight function of stress.
6. change the following words into nouns
 - a) anxious
 - b) proud
 - C) angry
 - d) young
 - e) funerary
7. kiswahili is nowadays becoming more of a first language than a second language to most young Tanzanian's. substantiate this statement by giving eight factors with relevant examples.
8. both hearing and listening uses ears in receiving sounds, differentiate hearing from listening and Describe 8 characteristics of good listener
9. differentiate technical translation from literally translation by giving five points
10. Describe the key components of the minutes in a meeting

ACCOUNTANCY1

From **MUNGO ACCOUNTACY 1**

1	Pg. 206	Qn. No. 2
2	Pg. 229	Qn. No. 11
3	Pg. 229	Qn. No. 12
4	Pg. 274	Qn. No. 5
5	Pg. 275	Qn. No. 6
6	Pg. 276	Qn. No. 7
7	Pg. 142	Qn. No. 10
8	Pg. 128	Qn. No. 13
9	Pg. 86	Qn. No. 9
10	Pg. 65	Qn. No. 6

BIOLOGY

1. a) Why it is necessary for pepsin to be secreted in inactive state?
b) With aid of diagrams describe four epithelial tissues and relate them their digestive roles.
2. a) Discuss the sensory and hormonal control of secretion of digestive juice in the stomach.
b) Why photolysis is important in photosynthesis.
3. Define the following terms;
 - a) i) Classification
 - ii) Systematic
 - iii) Artificial Classification
 - iv) Natural Classificationb) State three advantages and disadvantages of iii and iv of 3 (a) above.
4. Calculate total ATP formed during Aerobic respiration.
5. a) What is taxonomic hierarchy?
b) Write taxonomic hierarchy of maize plant.
6. a) What is basal metabolic rate?
b) Describe five factors affecting basal metabolic rate.
c) Calculate respiratory quotient when carbohydrates respired aerobically.
7. Suppose we have students in the same classroom within a school.
 - Juma- dark hair, brown eyes.
 - Zainabu- unburn hair, brown eyes.
 - Issa- dark hair, blue eyes.
 - Ramla- unburn, hair, blue eyes.
 - Hamisi- fair hair, brown eyes.
 - Zaituni- fair hair, brown eyes.
 - Ramadhani- fair hair, blue eyes.
 - Mariam- fair hair, blue eyes.Construct branched dichotomous key.
8. Calculate total ATP obtained during anaerobic respiration.
9. Photosynthesis depend on Photolysis of water discuss.
10. Briefly describe five importance of nutrition.

HISTORY

1. Explain four strength and four weaknesses of the pre-colonial education.
2. Assess the factors which contributed to the rise of the gap of development between Western Europe and Africa. Give eight points.
3. Examine the methods used by Afro – American to achieve their objectives. Give six (6) points
4. With eight points discuss the violence nature of the colonial state as remarked by Frantz Fanon.
5. Examine the impacts of the changes of the economic policies after the 2nd World War. Give eight points.
6. Identify six (6) characteristics of African working class during colonial era.
7. With six (6) points relate the collapse of the European capitalism and decolonization of Africa.
8. Show the contribution of the 2nd World War on the development of African nationalism and struggle for Independence. Give six (6) relevant facts.
9. Identify the major hurdles to development in Tanzania since independence. Give eight factors.
10. Discuss the weaknesses of the permanent constitution of 1977 of the United Republic of Tanzania. Provide six (6) weaknesses.

PHYSICS

1. (a) Show that path of a projectile (trajectory) is a parabola
 (b) An object of mass 1.5 kg is dropped from a point 50m above the ground. After falling through half that height, it is hit by a shell traveling horizontally with a velocity of 320 ms^{-1} . If the shell has a mass of 0.5 kg and bodies coalesce after impact,
 - (i) Draw the complete path of the motion.
 - (ii) Calculate the horizontal displacement of the system on hitting the ground.
 - (iii) Calculate the velocity with which the coalesced mass hits the ground. (take $g = 9.8 \text{ m/s}^2$)

2. (a) "Speed and velocity are dimensionally equivalent". Explain briefly the meaning of this statement.
 (b) The wavelength of the wave associated with a particle moving with momentum p is given by the expression:

$$\lambda = \frac{h}{p}, \text{ where } h \text{ is a constant}$$
 Determine the dimension of h and suggests two possible units of constant
 (c) A gas bubble from anvibration, f , of a stretched string is a function of tension, T , length, l , and the mass per unit length, m . By using dimensional analysis, prove that $f = k/l \sqrt{T/m}$, where k is a dimensionless constant.

3. (a) Briefly explain the types of errors that may enter into a measurement.
 (b) The relative density of a metal may be found by hanging a block of metal from a spring balance whose smallest division is 0.1 N. The balance reads 5 N in air and 4 N while immersed in water. Find the relative error in relative density of metal.
 (c) In a physical experiment to determine the Young's Modulus for steel, a student recorded the following measurements.

Length l , of the wire	=	$3.25 \pm 0.005\text{m}$
Diameter d , of the wire	=	$0.63 \pm 0.02 \text{ mm}$
Force F , on the wire	=	$26.5 \pm 0.1\text{N}$
Extension e , produced	=	$1.40 \pm 0.05 \text{ mm}$

 Calculate the Young's modulus of the wire from above measurements and its corresponding error given that Young's modulus = $\frac{\text{ForceArea}}{\text{extensidangt}}$

4. a) i) What is a systematic error?
 ii) The smallest divisions for the voltmeter and ammeter are 0.1 respectively. If $V = IR$, find the relative error in the resistance R , when $V = 2\text{V}$ and $I = 0.1\text{A}$

- b) i) Mention two uses of dimensional analysis.
- ii) The frequency f of a note given by an organ pipe depends on the length l , air density D , and air pressure P . use the method of dimension formula for the frequency.
- iii) What will be the new frequency of a pipe whose original frequency was 256 Hz if the air density falls by 2% and the pressure increases by 1%
5. (a) (i) State Newton's laws of motion.
- (ii) A car of mass 1000kg tows a caravan of mass 600kg up a road which rises 1.0m for every 20m of its length. There are constant frictional forces of 200N and 100N to motion of the car and the motion of the caravan respectively. The combination has an acceleration of 1.2m/s^2 with the engine exerting a constant driving force. Find:
1. the driving force
 2. the tension in the tow bar.
- (b) (i) What is meant by the terms projectile and trajectory?
- (ii) A ball is thrown with an initial velocity, v of 48m/s directed at an angle θ , of 37° with vertical. Find:
- 1 – the x- and y – components of v .
 - 2 – the position of the ball and the magnitude and direction of its velocity when $t = 2$ sec.
 - 3 – the highest point the ball and the time taken to reach there .
 - 4 – the range of the ball.
6. (a) An astronaut on a strange planet finds that she can jump a maximum horizontal distance if 15.0 m if her initial speed is 3.00 m/s. What is the free-fall acceleration on the planet?
- (b) A projectile is fired in such a way that its horizontal range is equal to three times its maximum height. What is the angle of projection?
- (c) A projectile is fired in such a way that its horizontal range is equal to three times its maximum height. What is the angle of projection?
7. What is the simple harmonic motion? Describe the motion by using graphical method by describe each symbol used
8. What is dimension analysis? Outline common uses and common limitations
9. State Bernoulli's principle. Derive general formula and state its uses and application
10. What is error and mistake? Mention and describe two common types of error

GEOGRAPHY

1. Study the photography below then answer the questions that follow:



- a) What type of photograph
 - b) Name the means of transport shown and state its limitations
 - c) Address solution facing the sectors
2. The following table shows the field book entries of compass traversing.

REG	DISTANCE	FORWARD BEARING	BACKWARD BEARING
AB	400M	245 ⁰	65 ⁰
BC	200M	350 ⁰	174 ⁰
CD	300M	73 ⁰	253 ⁰
DE	500M	112 ⁰	290 ⁰
EA	600M	250 ⁰	70 ⁰

- (i) Identify the stations with errors in taking bearing
 - (ii) Plot the traverse using suitable scale (1:10,000)
 - (iii) Identify the possible causes of errors and close the misclosure.
3. Carefully study the following data in the table below and answer the questions that follow.

COUNTRY	COFFEE	TEA	RUBBER	COTTON	COCOA	SISAL
TANZANIA	90	220	420	145	265	150
ZANZIBAR	75	130	195	90	110	100

- (a) Present the data by means of proportional semi circles.
 - (b) List down three advantages and disadvantages.
4. Classify lakes according to size and mode of formation.
 5. Describe the processes involved in the formation and development of soil profile and structure.
 6. Examine the theories of glaciation. Six points
 7. "Land form is a function of process, structure and stage." Discuss.

KISWAHILI

1. Zipo hoja mbalimbali zinazojaribu kubainisha asili ya Kiswahili. Jadili mbili kati ya hoja zifuatazo:
 - (a) Kiswahili ni Kiarabu
 - (b) Kiswahili ni Pijini
 - (c) Kiswahili ni Kibantu
2. "Lahaja ni matokeo ya kukua kwa lugha. " Onyesha ukweli wa hoja hii ukitumia Lugha ya Kiswahili .
3. "Kukua na kuenea kwa Lugha ya Kiswahili Afrika Mashariki halikuwa na bado si jambo la mteremko." Jadili
4. Eleza tofauti ya
 - (a) Kirai na kishazi
 - (b) Sarufi maumbo na sarufi miundo
 - (c) Mofimu huru na mofimu tegemezi
5. Bainisha vipashio vitano vinavyounda kirai nomino. Kwa kila kimoja tunga sentensi mbili za mfano
6. Taja dhima tatu za kirai kitenzi na kuonyesha mifano kwa kutumia sentensi
- A. Utumizi wa lugha (alama 20)
7. Onyesha utata uliomo katika sentensi zifuatazo, Kisha ziandike upya ili kuondoa utata huo
 - (a) Watekaji wote watapigwa faini
 - (b) Wizi wa watoto ni lazima ukemewe
 - (c) Ukipanda vibaya, Utajuta
8. Eleza na kutoa mifano kuhusu misimu ya Kiswahili inayotokana na
 - (a) Kukopa maneno
 - (b) Kuyapa maneno ya kawaida maana za ziada
 - (c) Kubuni maneno mapya kabisha
9. Eleza sifa za mtindo wa lugha ya mazungumzo yasiyo rasmi
10. Andika kadi ya mwaliko kwa ajili ya sherehe yako ya kumaliza Kidato cha Sita. Jina lako ni Bahati Nuru .

ECONOMICS

1. Explain adequately the Fundamental principle of Economics
2. Is there any difference between socialist economies and capitalist economies?
3. (a) What factors violate the law Demand
(b) Differentiate a change in supply and change in quantity demand
4. (a) What is meant by the following terms
 - (i) Perfect Market
 - (ii) Imperfect Market
 - (iii) Monopoly
 - (iv) Monopsony
 - (v) Oligopolists collusion
(b) Explain the condition under which a producing firm is advised to shutdown
- (c) How does a monopolistic competition make
 - (i) Profit
 - (ii) Loss
 - (iii) Break even

Show with aid of Diagrams

5. (a) Define " Market " as used in Economics
(b) Explain how prices may be determined in market
6. Marginal productivity theory suggests that people are paid according to the contribution to production of their resources including labour. Discuss the viability of the theory.
7. Define a business or trade cycle and identify main indicator
8. Discuss three types of involuntary Unemployment.
9. Describe the General Characteristics of population.
10. What is the practical application of price elasticity of demand?

ADVANCE MATHEMATICS

1. (a) Using a table, evaluate correctly to 3- decimal places the value of $\sqrt[3]{\theta \cos \theta \sec \theta}$ for $\theta = 15^\circ$.
 (b) Using a scientific calculator, evaluate correctly to 3-decimal places the value of $\left(\frac{24631'' + 8.53 \text{ rad}}{\pi \sin 6\theta}\right)$
 (c) In a recent study of 500 men and 500 women, it was noted that; a total of 650 were married of which 275 were men and 500 claimed to be happy. Out of 750 who claimed to be happy, 400 were men of which 200 were married. Summarize this information on the venn-diagram and find:-
 (i) The number of married people who are happy.
 (ii) The number of unmarried people who are not happy.

2. (a) Given any triangle ABC, if $\tan A \tan B = 3$, find $\frac{\cos(A-B)}{\cos C}$.
 (b) Find x, if $\tan^{-1}\left(\frac{1-x}{1+x}\right) = \frac{1}{2} \tan^{-1} x$.
 (c) Using sine rule in a triangle ABC, show that $\frac{a+b-c}{a+b+c} = \tan \frac{A}{2} \tan \frac{B}{2}$.

3. (a) Points A and B have coordinates (1, 0) and (0, 1) respectively. Find the coordinates of the points P and Q in terms of λ given that P divides \overline{OB} in the ratio $\lambda:1$ and Q divides \overline{OA} in the same ratio.
 (b) For what positive values of k is the fixed circle, $C_1: x^2 + y^2 = 4$ touches the variable circle, $C_2: x^2 + y^2 - 2kx = 1 - k^2$.

4. (a) Find the minimum value of $y = 5 \cosh x + 3 \sinh x$.
 (b) Differentiate $y = \frac{\sec x \tan x}{e^x}$
 (c) Find and identify all stationary points of function $f(x) = x^3 - 4x^2$.

5. (a) Find the constants m and n such that $x-2$ is a common factor of $P(x) = x^3 - x^2 - 2mx + 3n$ and $Q(x) = nx^3 + mx^2 + x + 2$.
 (b) Find the constants a, b and c such that; when $P(x) = x^4 - 7x^3 + 4x - 2$ is divided by $D(x) = (x-1)(x+1)(x-3)$, the remainder is $R(x) = ax^2 + bx + c$.
 (c) Solve the equation $3x^4 - 4x^3 - 14x^2 - 4x + 3 = 0$.

6. (a) Sketch the periodic function; $f(x, y): y = \begin{cases} (x-3n)^2; & 3n < x \leq 3n+1 \\ 3-2(x-3n); & 3n+1 < x \leq 3n+2 \end{cases}$ for same integers, $n = -1, 0, 1$. Then state its domain, range and period.

- (b) In the expansion of $\left(2x + \frac{1}{3x}\right)^6$; find:-
- The constant term independent of x
 - The coefficient of the term with $\frac{1}{x^2}$.

7. (a) Using trigonometric substitution evaluate $\int \sqrt{9-x^2}$.

(b) Using $\int \frac{dx}{1-x^2}$, show that $\tanh^{-1} x = \frac{1}{2} \ln \left(\frac{1+x}{1-x} \right)$.

(c) Evaluate $\int_0^{\pi/2} \frac{d\theta}{1+\cos\theta}$

8. (a) Given the statement, $S = P \rightarrow Q$; Find and simplify:-

- The contrapositive of the converse of S .
- The converse of the contrapositive of S .

- (b) Simplify the proposition below:-

(i) $P \wedge (P \vee Q)$ (ii) $\sim(P \wedge Q) \wedge (P \vee \sim Q)$

- (c) Symbolize the argument below and test its validity:-

“If I like logic, I will study arguments. I will study arguments only if I have logical minds. I don't like logic. Therefore, I will not study arguments.”

9. (a) Find the area of the region enclosed by $y = \sqrt{x+1}$ and the y -axis.

- (b) Find the volume of a solid generated when a region between a curve $y = x^2$ and a line $y = 9$ is rotated about the x -axis from $x=0$ to $x=3$.

10. A furniture company makes chairs and tables which are both processed through 3-machines A, B and C. The requirements, in hours per week, on each machine is as follows:

Machine type	Time required per item (hours)		Available time per week (hours)
	Chairs	Table	
A	3	3	30
B	5	2	50
C	2	6	60

If each chair sells at sh 15,000/= and each table sells at sh. 25,000/=; Find the number of chairs and tables to be made in a week in order to maximize the weekly income. What is the maximum income obtained in a week?