THE UNITED REPUBLIC OF TANZANIA

THE PRESIDENT'S OFFICE

REGINAL ADMINISTRATION AND LOCAL GOVERNMENT

RUVUMA REGION FORM SIX PRE-NATIONAL EXAMINATION

122/1 ENGLISH LANGUAGE 1

TIME: 3:00HOURS Monday 2nd March, 2020 P.M

INSTRUCTIONS:

1. This paper consists of section A and B.
2. Section A consists of four (4) short answer questions where by section B consists of four (4) essay questions.
3. Answer seven (7) questions; questions number six (6) and seven (7) are compulsory.
4. Mobile phones and unauthorized materials are not allowed in the examination room.
5. Write your examination number on every page of your answer sheet (s) /booklet(s).

| QUESTION NUMBER | PUT(√) | SCORES | FOR EXAMINER'S INITIALS |
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| TOTAL | | | |

This paper consists of two (2) printed pages

**SECTION A: (40 Marks)**

## LANGUAGE SKILLS

**Answer all questions from this section.**

1. (b) Define the following terms:
   (i) Skimming.
   (ii) Scanning.
   (iii) Intensive reading.
   (iv) Extensive reading.
   (v) Critical reading.

   (b) Point out five conditions necessary for effective intensive reading.

2. Differentiate the following pairs of words.
   (i) Citation and reference.
   (ii) Bibliography and Encyclopedia.
   (iii) Note taking and Note Making.
   (iv) Plagiarism and Public announcement.
   (v) Fact and Opinions.

3. (a) Mention five (05) Phonological differences between the national language of Tanzania and British English.

   (b) Divide the following words into Syllables keeping them in their orthographic form and then mark stress by underlining their syllables on which the primary stress fall.
   (i) Decide
   (ii) Tortoise
   (iii) Parcede
   (iv) Calculator
   (v) Photographic

4. (a) What is intonation? Mention four types of intonation.

   (b) Imagine that you are appointed by Tanzania ministry of education to compose a book for teaching and learning in A-level English Subject. Outline five important elements which you will put in a reference.

## SECTION B (60 Marks)

## INTRODUCTION TO LANGUAGE, WORD FORMATION, INTERPRETATION AND TRANSLATION

**Answer three (03) questions from this section**

5. Appraise eight (8) factors which have led Kiswahili to rapidly become the first language among vernacular speakers in Tanzania recently.

6. What is lexical morpheme? Explain features of lexical morphemes with relevant examples. (Give 8 points).

7. Describe seven (07) characteristics of technical translation.

8. What is performance? Describe six factors affecting performance when student uses English in Tanzania.

THE UNITED REPUBLIC OF TANZANIA

PRESIDENT'S OFFICE

REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

RUVUMA REGION

FORM SIX- PRE- NATIONAL EXAMINATION 2020

CODE 122/2 ENGLISH LANGUAGE 2

TIME: 3 HOURS 05 MARCH 2020 AM.

INSTRUCTIONS:

1. This paper consists of sections A and B.
2. Section A consist of four (04) short answer questions where by section B consist of four
   ( 04) essay questions.
3. Answer seven questions, questions- number six (06) and seven (07) are compulsory.
4. Mobile phones and unauthorized materials are not allowed in the examination room.
5. Write your examination number on every page of your answer sheet(s)/booklet(s)

| FOR EXAMINER'S USE ONLY | | | |
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This paper consists of four (4) printed pages

## SECTION A ( 40 MARKS)

## WRITING LITERARY STYLISTICS

**Answer all questions in this section**

1. (a) Write according to the instruction given after each of the following language situations.
   i. You want to ask someone you don't know about any thing, How will you start talking to him/her?
   ii. You are walking with your fellow student. She steps on a stone and falls, what will say to her?
   iii. " Be patriotic and fly air Tanzania for utmost pleasure and safety". What type of language style is this?
   iv. "You think this bus belongs to your father? What language style has been used.
   v. Someone is about to fall in to a ditch unknowingly. How can you attract his/her attention.

   ( b) Define the following terminologies.

   i. Parables
   ii. Anadiplosis
   iii. Jargon.
   iv. Enjambment
   v. Tenor of discourse

2. Differentiate the following pairs of literary terms.
   a. Rehearsal/ stage direction.
   b. Dirge/ tone
   c. Mine/Non verbal communication.
   d. Literal language/ literary language.
   e. Irony/satire.

3. (a) Write a stylistic terms for the following sentences.

i. The use of word or expression which is gentle or less direct than the one which is normally used to express painful or embarrassing.....

ii. The poem which aimed at giving instructions to the readers.....

iii. A willing song which is sung at the funeral or in commemoration of death is called.....

iv. A object or an idea or phrase that is repeated in a work of art for artistic effects is called.....

v. A stanza with four verses is called.....

(b) Mention five(05) features of poetry.

4. (a) Outline five(05) features of memo.

(b) Mention with examples grapholojical features of scientific style.

## SECTION B ( 60 Marks)

## APPRECIATING LITERARY WORK.

Answer three(03) questions in this section

**LIST OF READINGS.**

**PLAYS**

1. Betrayal in the City.....Imbuga
2. I will Marry when I want.....Ngugi wa Thiong'o& Ngugi wa Miri
3. The Bride .....Austine Bukenya
4. Lwanda Magere.....Okoiti Orutatah
5. An Enemy of the People.....Henrick Ibsen.
6. Black Mamba.....John Ruganda.

## NOVELS & SHORT STORIES

1. Encounters from Africa.....Mcmillan Publishers Ltd.
2. The Beautiful One Are not yet Born..... Anyikwe Armah.
3. A Man of the People.....Chinua Achebe.
4. Divine Providence.....Severine N. Ndunguru.
5. The Rape of Pearl.....Magara Nyango
6. Vanishing Shadows.....Namige Kayondo.
7. His Excellency the Head of State.....Danny Safo.
8. A season of Waiting..... Davide Omwale.

## POETRY

1. Selected poems..... Institute of Education.
2. The Wonderful Surgeon and Other Poems....Charles Mloka.

5 Sometimes characters become victims of their own creations. Discuss with references to two plays covered under this section.

6 Choose two (02) Novels or short stories you have read under this section, describe on how the to days, reader in Tanzania misuse power.(08 points)

7 Poems like other forms of art they may have a very powerful message, are more than propaganda or political slogan in to days society. Discuss with references from four poems you have read. ( 08 points)

8. . Drama is more effective genre in bringing message to the day's youth in Tanzania. Discuss ( 08 Points)

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REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

RUVUMA REGION FORM SIX PRE-NATIONAL EXAMINATION

111

GENERAL STUDIES

TIME:3:00 HOURS

Monday 2nd March, 2020 a.m

INSTRUCTIONS:

1. This paper consists of seven (07) questions.
2. Answer five (05) questions but question number 1 is compulsory.
3. Each question carries twenty ( 20) marks.
4. Write your examination number on every page of your answer booklet (s).
5. Cellular phones and unauthorized materials are not allowed in the examination room.

| QUESTION NUMBER | PUT(√) | SCORES | EXAMINER'S INITIALS |
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This paper consists of two (2) printed pages

1. Examine six weaknesses observed in the implementation of philosophy of education for self reliance in Tanzania.
2. Analyse six typology of cybercrimes in Tanzania.
3. Discuss how can Tanzania be successful in "Tanzania ya viwanda policy" through the use of imported technology. (Give six points).
4. What are the six roles of political parties in the democratic society of Tanzania?
5. As far as international cooperation is concerned, examine the prospects of Tanzania's involvement in international affairs. (Give six points).
6. Suggest six measures which can be taken to overcome challenges associated with endless conflicts in Africa.
7. By using six points, show the traits of successful self-reliant person and entrepreneurs.

JAMHURI YA MUUNGANO WA TANZANIA

OFISI YA RAISI TAWALA ZA MIKOA NA SERIKALI ZA MITAA

MITIHANI WA KUJIPIMA KABLA YA MTIHANI WA TAIFA

121/1 KISWAHILI 1

MUDA: SAA 3 Jumanne 03/03/2020 Mchana.

MAELEKEZO:

1. Karatasi hii ina maswali nane (8) katika sehemu A and B.
2. Jibu maswali saba (7), maswali yote katika sehemu A na maswali matatu (3) toka sehemu B. Swali la nane (8) ni la lazima.
3. Sehemu A ina alama 40 na sehemu B ina alama 60.
4. Simu za mkononi na vikokotozi haviruhusiwi katika chumba cha mtihani.
5. Andika namba ya mtihani katika kila karatasi ya kujibia.
6.

| NAMBA YA SWALI | WEKA ALAMA (√) KATIKA KILA SWALI ULILOJIBU | ALAMA | KIFUPISHO CHA MSAHIHISHAJI |
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| JUMLA | | | |

Mtihani huu una kurasa tatu (4).

SEHEMU A: (ALAMA 40)

UFAHAMU, MATUMIZI YA SARUFI NA UTUMIZI WA LUGHA.

**(Jibu maswali yote katika sehemu hii)**

1. Soma habari ifuatayo kasha jibu maswali yafuatayo;

Kwa neon zima uzalendo ni mapenzi ya nchi. Mapenzi haya hayafanyiki kwa kwa njia za kubuniwa na watu lakini yamekwisha tangulia kuwa katika mioyo yetu. Uzalendo ni tabia ya maumbile nasi tunayo toka wakati wa kuzaliwa. Tunafikiri habari za nchi yetu kama tufikiriavyo habari za baba na mama zetu,kwa hivi kila mtu anajali sana mahali alipozaliwa.

Baadhi ya watu hawakubaliani nazo wako tayari siku zote kupinga pishi ya hoja zako kwa ukufi wa hoja zao. Wao hufikiri kwamba uzalendo ni maono ya ushupavu na dalili ya uchache wa ustaarabu wa moyo kwao uzalendo ni imani ya kishenzi, kwa sababu hutenga kando nchi nyingine.

Wanadai kwamba mtu ni lazima apende ulimwengu mzima na watu wa ulimwengu hufanya kila mtu kuwa raia wa dunia si wa mahali pake padogo panapojulikana kama nchi yake. Lazima niseme kweli kwamba wazo la udugu wa ulimwengu ni bora kwa masikio lakini kwa matumizi haliwezekani. Bora katika watu ni yule apendaye nchi yake kwanza. Kuna mashaka makubwa kama mtu anaweza kuamini katika mapenzi ya udugu wa ulimwengu bila kupenda nchi yake ikiwa hivyo uzalendo huthibitisha ubora wa kupenda sehemu ya ulimwengu ambayo ndani yake tumezaliwa.

Mapenzi ya mtu kwa nchi yake hayaoneshi chuki ya nchi nyingine za ulimwengu. Uzalendo wa uongo ndio utufanyao kuchukia nchi nyingine. Aidha, lazima tupende nchi zetu kwa sababu ya nchi zenyewe, pasiwe n kusudi baya au la choyo nyuma yake. Kuna uzalendo wa uongo vilevile ambao ni kila tufanyayo kwa makusudi yetu wenyewe ya choyo kwa sababu ya nia mbaya za kujitajirisha. Uzalendo usitufanye kujiona kwamba sisi ni watu wa azizi ulimwenguni, na makabila yote si kitu.

Mapenzi ya nchi zetu huonekana kama maono bora lakini hayana maana kama hayachukuani na matendo. Uzalendo wa matendo tu ndiyo wenye thamani nchini iwapo katika hatari ya shambulio la adui. Mapenzi ya mtu kwa nchi yasiyo ya matendo yanaweza kuwa mema katika nyakati za amani lakini katika nyakati za vita uzalendo huthibitisha unyofu wake katika kitali.

Uzalendo hutaka sadaka za maisha, jamaa, mali na kila kitu cha mtu. Watu wanatoa sadaka za maisha yao kwa sababu ya nchi zao ni mashahidi.

MASWALI:

(a) Mwandishi ana msimamo gani kuhusu uzalendo?

(b) Mwandishi anatoa agizo gani kuhusu uzalendo?

(c) "Kupinga pishi ya hoja zako kwa ukufi wa hoja zao". Usemi huu una maana gani kulingana na habari uliyoisoma?

(d) Andika kichwa cha habari kinachofaa kwa habari uliyoisoma kisichozidi maneno matatu (3).

2. Vitenzi vya Kiswahili vina sifa mahususi zinazovitofautisha na vitenzi vya lugha nyingine. Kwa kutumia mifano onesha sifa tano za vitenzi vya kiswahili.

3. (a) Eleza maana ya viambishi vya O-rejeshi.

(b) Unganisha sentensi zifuatazo kwa kutumia O-rejeshi.

(i) Mtoto ametekwa nyara. Mtoto hajapatikana.

(ii) Kitabu kilichapwa. Kitabu kimekwisha.

(iii) Zephania anatafuta viatu. Viatu vimepotea.

(iv) Tuzo ameleta mpira wa mikono. Unahitajika.

4. Kwa kutumia mifano, fafanua mambo matano yanayoweza kusababisha mabadiliko katika matumizi ya lugha.

SEHEMU B: (ALAMA 60)

UANDISHI, MAENDELEO YA KISWAHILI NA TAFSIRI NA UKALIMANI.

**Jibu maswali matatu (3), swali la nane (8) ni lazima.**

5. Andika risala kwa niaba ya wanafunzi wenzako wa kidato cha sita kwa mgeni rasmi mwalikwa katika mahafali yenu ya kumaliza kidato cha sita.

6. "Kiswahili ni kiarabu kwa jina lake lakini ni kibantu kwa tabia yake". Thibitisha kauli hii kwa mifano maridhawa huku ukitoa hoja sita za kiisimu.

7. Eleza faida zinazotarajiwa kwa Tanzania na watu wake, kwa kiswahili kuteuliwa kuwa lugha rasmi katika Jumuiaya ya maendeleo ya Kusini mwa Afrika (SADC). Toa hoja tano (5).

8. Tafsiri na ukalimani ni vitu ambavyo haviwezi kutenganishwa". Jadili kauli hii kwa kutumia hoja sita (6).

JAMHURI YA MUUNGANO WA TANZANIA

OFISI YA RAIS

TAWALA ZA MIKOA NA SERIKALI ZA MITAA

MITIHANI WA KUJIPIMA KABLA YA MTIHANI WA TAIFA

121/2 KISWAHILI 2

MUDA: SAA 3 Jumatano 11/03/2020 Mchana.

MAELEKEZO:

1. Karatasi hii ina maswali nane (8) katika sehemu A and B.
2. Jibu maswali saba (7), maswali yote katika sehemu A na maswali matatu (3) toka sehemu B. Swali la saba (7) ni la lazima.
3. Sehemu A ina alama 40 na sehemu B ina alama 60.
4. Simu za mkononi na vikokotozi haviruhusiwi katika chumba cha mtihani.
5. Andika namba ya mtihani katika kila karatasi ya kujibia.

| NAMBA YA SWALI | WEKA ALAMA (√) KATIKA KILA SWALI ULILOJIBU | ALAMA | KIFUPISHO CHA MSAHIHISHAJI |
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Mtihani huu una kurasa tatu (4).

## SEHEMU A

## FASIHI KWA UJUMLA NA USANIFU WA MAANDISHI

**Jibu maswali yote katika sehemu hii.**

1. "Fasihi ina matumizi yake kulingana na mtazamo wa mhakiki." Jadili jinsi mhakiki anavyoweza kupotosha jamii yake kwa hoja tano na mifano kuntu.
2. Kwa kifupi eleza sifa tano (5) za mtambaji wa hadithi za fasihi simulizi.
3. Riwaya pendwa huwa na sifa za kipekee. Thibitisha dai hili kwa kutoa hoja tano.
4. Soma kifungu cha utenzi ufuatao kisha eleza mbinu za kifani zilizotumika kufikisha ujumbe.

    1. Kazi yangu ni ngumu mno,
       Naona ni heri niache tu!
       Ona wale ona yale kwa raha tu!
       Kila siku natanga na njia mimi mwana!
       Jamani dunia ina upendeleo!
       Mimi Simandoje nifanye nini!
           Oooh! Nalia
           Mimi najuta!
           Oooh! Nitajiua!
           Nipotee duniani!
           Oooh! Msinione!
           Mimi na umasikini wangu x2
    2. Baba yangu mzee Mwandoje!
       Uliniachia shamba, jembe la mkono!
       Nimelima nimechoka!
       Mazao kidunchu,
       Mgongo kupinda na kinundu mgongoni!
       Mimi najuta, dunia nimemeza!
       Hata inzi wamechoka, kwangu hakuna ukoko!
       Haaa! Baba Mwandoje umenipa urithi gani?
       Wengine mikono laini, ya kwangu kama ya Kenge!
       Oho! Mke amechuja, rangi yake samawati!

3. Jasho ni ndiyo maji yangu!
   Miguu yangu mafunza, akili zangu za mwisho!
   Majirani wanisema, hati nimezidi,
   Mimi kunuka uvundo!
   Ndiyo fani yangu naukimbia umaskini!
   Lini nitatoka, kuchumia juani nimechumia!
   Naomba mniwezeshe! Mimi Simandoje,
   Nashukuru si kwapu kwapu.
4. Mimi Simandojee! Tanzaniaaa!
   Naomba msikie, mkulima nalia!
   Naomba unielewe, umaskini ni kilema!
   Leo nakiondoa, hakika nimekana
   Mapengo yang'ata, leo nathibitisha
   Siendi mjini naogopa, kuwa ombaomba
   Jua nichome, nitapata akili.

**SEHEMU B (ALAMA 60)**
**USHAIRI, RIWAYA NA TAMTHILIYA**
**Jibu maswali matatu (3), swali la saba (7) ni la lazima.**

USHAIRI

KIMBUNGA-Haji Gora Haji.
MAPENZI BORA-Shaaban Robert.
CHUNGU TAMU-Theobald A Mvungi.
FUNGATE YA UHURU-Mohamed S Khatibu.

5. " Ushairi ni mwongozo wa jamii katika maisha ya kila siku." Jadili kauli hii kwa kutumia diwani mbili ulizosoma. (Tumia hoja nne kwa kila diwani)

6. Chagua taswira nne (4) kutoka katika vitabu viwili (2) ulivyosoma kisha jadili jinsi waandishi walivyotumia lugha hizo za picha kama mbinu ya kufikirisha ujumbe kwa jamii.

RIWAYA

USIKU UTAKAPOKWISHA-Mbunda Msokile

KUFIKIRIKA-Shaaban Robert

MFADHILI-Hussein Tuwa

VUTA N'KUVUTE-Shafi Adamu Shafi

7. Tofautisha sifa za wahusika wakuu kutoka riwaya mbili ulizosoma. (Tofauti nne kwa kila riwaya)

TAMTHILIYA

KWENYE UKINGO WA THIM-Ebrahim Hussein

MORANI – Emmanuel Mbogo

KIVULI KINAISHI – Said Mohamed

NGUZO MAMA – Penina Muhando

8. "Vijana ndio wenye uwezo mkubwa wa kuleta mabadiliko katika jamii yeyote ile" Dhihirisha ukweli wa kauli hii kwa kutumia tamthiliya mbili ulizosoma, hoja nne kwa kila kitabu.

THE UNITED REPUBLIC OF TANZANIA

PRESIDENT'S OFFICE

REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

RUVUMA REGION

FORM SIX PRE-NATIONAL EXAMINATION

112/1

HISTORY 1

TIME: 3 HOURS 09 March 2020 a.m

INSTRUCTIONS

1. This paper consists of seven ( 07) questions.
2. Answer five questions, question number one(01) is compulsory.
3. Each question carries twenty (20) Marks.
4. Cellular phones and any Unauthorized materials are not allowed in the examination room.
5. Write your Examination number on every page in your answer sheets.

| QUESTION NUMBER | PUT(√) | SCORES | EXAMINER'S INITIALS |
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*This paper consists of two (2) printed pages*

1. With reference to the intercustrine region, elaborate the reasons for development of feudalism in the region.( Six points)

2. Refute the Fallacy that" at advent of Whiteman in the fifteenth Century, Africa was a dark Continent. Discuss with six points.

3. Since their arrival as a slaves in the new World, Africans lived horribly politically, economically and Socially. Discuss by showing the problems they faced. ( Six points)

4. Examine six factors that determined the distribution of social services during the colonial period.

5. Analyse six agricultural reforms Undertaken to improve agricultural production in the colonial post 1945.

6. The year 1945 was a turning point in the African history. Discuss( six points)

7. Describe the reasons behind for the pressure for constitutional changes in Tanzania since 1990. ( Six points)

UNITED REPUBLIC OF TANZANIA

PRESIDENT'S OFFICE

REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

RUVUMA REGION

FORM SIX PRE-NATIONAL EXAMINATION

112/2 HISTORY 2

TIME: 3 HOURS 16 ,March 2020 PM

INSTRUCTIONS

1. This paper consists of seven( 07 ) questions. Answer ONLY Five questions of your choice. Question number one(01) is compulsory.
2. Each question carries twenty(20) Marks.
3. Cellular Phones and unauthorized materials are not allowed in the examination room.
4. Write your examination number on every page of your answer sheet(s)

| QUESTION NUMBER | PUT(√) | SCORES | EXAMINER'S INITIALS |
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*This paper consists of two (2) printed pages*

1. " America is more our country than it is for the whites. It was built by sweat of our labour" remarked the Afro-Americans. How valid is the statement? ( six points)
2. The totalitarianism systems in Europe were the outcomes of the first world war. Substantiate with six concrete arguments.
3. Discuss the reasons for the signing of the Berlin Congress of 1878.( Six points).
4. The fall of Socialist Block was like a deep thorn on the Infant growth of economic and political situation in third world countries. Substantiate by showing its implications in African countries( Six points)
5. Appraise six effects of USA relations with Japan in the period after the second World War.
6. Analyse three causes and three impacts of camp David Accords.
7. In solving the problems of underdevelopment in developing nations. The Brandt report had the ways out. Explain the outcomes of the report.

THE UNITED REPUBLIC OF TANZANIA

PRESIDENT'S OFFICE

REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

RUVUMA REGION FORM SIX PRE NATIONAL EXAMINATION

132/1 CHEMISTRY 1

Time: 3 Hours Monday, 2nd March 2020 p.m

**Instructions**

1. This paper consists of ten (10) questions in sections A and B.
2. Answer all questions in section A and any two (02) questions from section B.
3. Each question in section A carries ten (10) marks and those of section B carries fifteen (15) marks each.
4. Mathematical tables and non – programmable calculator may be used
5. Cellular phones and unauthorized materials are not allowed in the examination room.
6. Write your examination number on every page of your answer booklet(s).
7. In your calculations you may use the following constants:

   1 litre = 1 $dm^3$ = 1000$cm^3$

   Atomic masses: H = 1, C = 12, O = 16, N = 14.

   Molar gas constant = 8.314 J/Kmol

   Velocity of light, c = 3.0 x $10^8$ m/s or 0.0821atm$dm^3mol^{-1}K^{-1}$

   1 $\mu M = 10^{-6}M$

   GMV=22.4$dm^3$

*This paper consists of six (6) printed pages.*

## SECTION A (70 Marks)

**Answer all questions in this section**

1. (a) Briefly explain the following terms.

   (i) Photon of light.
   (ii) Quantum number.
   (iii) Ground state.
   (iv) Excited state.
   (v) Atomic spectrum. (2.5 marks)

   (b) Briefly explain why the following sets of quantum numbers are not allowed in hydrogen atom.

   (i) $n = 1, l = 1\ ml = 0$
   (ii) $n = 1, l = 0, ml = 2$
   (iii) $n = 4, l = 3, ml = 4$
   (iv) $n = 1, l = 0, ml = 0$
   (v) $n = 2, l = 1, ml = 1$ (2.5 marks)

   (c) (i) Calculate the energy of a line in Lyman series with $n_1 = 1$ and $n_2 = \infty$

   (ii) An experimental Iodine laser emits light of wavelength 1.315 $\mu M$. Calculate the frequency of this light and the energy per photon. (05 marks)

2. (a) (i) Give four (04) differences between electrovalent bonding and covalent bonding.

   (ii) Give two uses of hydrogen bonding.

   (iii) Give three conditions which favour the formation of ionic bond. (07 marks)

   (b) Give six (6) differences between sigma ($\sigma$) bond and pie ($\pi$) bond. (03 marks)

3. (a) Briefly explain Graham's law of diffusion. (01 marks)

   (b) A sample of tear gas is released in the last row seats in a lecture Hall. At the same time a sample of laughing gas is released in the first row seats. After a time the last 10 rows of students are crying and the first 20 rows of students

are laughing. If the laughing gas is $N_2O$ with molar mass of 44. What is the molar mass of tear gas? (04 marks)

(c) Oxygen is collected over water in a test tube at 33°C. The gas volume is measured to be $10cm^3$. A manometer reads 85.3Kpa of air pressure. What volume would the dry Oxygen occupy at S.T.P, if the vapour pressure of water is 5.0 kPA? (03 marks)

(d) With the help of Amagat's curve show how carbon dioxide gas deviates from ideal gas behavior. (02 marks)

4. (a) Briefly explain the effect of the presence of dissolved solid on pure solvent with respect to its:
   (i) Freezing point.
   (ii) Boiling point. (04 marks)

   (b) When 100g of sucrose (sugar) were dissolved in 1kg of water at 25°C, the vapour pressure decreased by 16.6 Pa. What is the molar mass of sucrose? The vapour pressure of water at 25°C is 3.17kPa. (03 marks)

   (c) A solution of certain sugar of R.M.M $342gmol^{-1}$ has an osmotic pressure of $127600NM^{-2}$ at 12°C. What is the concentration of the solution in grams per $dm^3$? (03 marks)

5. For each of the following compounds, suggest two methods of preparation.
   (a) Magnesium Oxide.
   (b) Calcium carbonate.
   (c) Lead (II) nitrate.
   (d) Iron (II) Chloride.
   (e) Zinc hydroxide. (10 marks)

6. (a) The standard enthalpy of formation of Carbon monoxide is $\Delta H^{\theta}_f(CO) = -110.5KJmol^{-1}$ and $CO_{(g)} + \frac{1}{2}O_{2(g)}, \Delta H^{\theta}_f = -283KJmol^{-1}$
   (i) Explain Hess's law of constant heat summation.
   (ii) Using the data above, calculate the enthalpy of formation of Carbon dioxide. (3 marks)

   (b) Determine the lattice energy of Magnesium oxide and draw the Born Haber cycle using the following information.

$$Mg_{(s)} + \frac{1}{2}O_{2(g)} \rightarrow MgO_{(s)} \qquad \Delta H^{\theta} = -601.7kJmol^{-1}$$

$Mg_{(s)} \rightarrow Mg_{(g)} \qquad \Delta H^{\theta} = +146 kJmol^{-1}$

$Mg_{(g)} \rightarrow Mg^{+}_{(g)} + e^{-} \qquad \Delta H^{\theta} = 736 kJmol^{-1}$

$Mg^{+}_{(g)} \rightarrow Mg^{2+}_{(g)} + e \qquad \Delta H^{\theta} = +1448 kJmol^{-1}$

$\frac{1}{2} O_{2(g)} \rightarrow O_{(g)} \qquad \Delta H^{\theta} = +249.2 kJmol^{-1}$

$O_{(g)} + e \rightarrow O^{-}_{(g)} \qquad \Delta H^{\theta} = -141.4 kJmol^{-1}$

$O^{-}_{(g)} + e^{-} \rightarrow O^{2-}_{(g)} \qquad \Delta H^{\theta} = 790.8 kJmol^{-1}$ (5 marks)

(c) Explain the following

(i) Thermo chemical equation.

(ii)Standard enthalpy fusion. (2 marks)

7. (a) Briefly explain the equilibrium law and provide the corresponding expression.

( 2 marks)

(b) (i) Explain any four characteristics of chemical equilibrium.

(ii) Write the expression for the equilibrium constant, $K_c$ for the reaction.

$Cu_{(s)} + 2Ag^{+}_{(aq)} \leftrightharpoons Cu^{2+}_{(aq)} + 2Ag_{(s)}$ ( 4 marks)

(c) At 400°C the value of $K_c$ for the reaction $N_{2(g)} + 3H_{2(g)} \leftrightharpoons 2NH_{3(g)}$ is 0.509 $dm^6/mol^2$. If 2.5 moles of $N_2$ , 7.5 moles of $H_2$ were introduced into 2.5 litres flask and allowed to reach at equilibrium at 400°C, what would be the equilibrium concentration of each gas? What is the value of $K_p$ for the reaction? ( 4 marks)

## SECTION B ( 30 Marks)

**Answer any two (2) questions**

8. (a) (i) Carefully study the following reaction.

$CH_{4(g)} + Cl_{2(g)} \xrightarrow{u.v\ light} CH_3Cl_{(g)} + HCl_{(g)}$

Give a detailed mechanism for the formation of chloromethane. (2 marks)

(ii) Using the chemical equations, explain six (6) methods used in preparation of alkanes. Indicate the reagents and reaction conditions.(6 marks)

(b) (i) State Markownkoff's rule of electrophilic addition.

(ii) Give two products including their names when but – 1 – ene reacts with gaseous hydrogen bromine (HBr).

(iii) Suggest the mechanism of the reaction in (b)(ii) above which lead to the formation of the major product. ( 4 marks)

(c) Suggest one chemical test to distinguish the following pairs of organic compounds.

(i) $CH_2CH_2$ and $CH_3H_3$

(ii) $CH_3CH_2CCH$ and $CH_3CCCH_3$

(iii) $CH_2CH_2$ and $C_2H_2$ ( 3 marks)

9. (a) Give the mechanism for the Friedel – Craft's formation of ethylbenzene from benzene and chloroethane. ( 2 marks)

(b) Give two reactions in which Ethene and Benzene react in a similar way. ( 2 marks)

(c) Indicate whether the following groups are electron releasing (donor) or electron withdrawing. For each substituent group give the inductive or mesomeric effects they have and their directing effect.

(i) Iodobenzene.

(ii) (Bromoethyl) benzene.

(iii) Benzene Carboxylic acid.

(iv) Benzene carbaldehyde. ( 8 marks)

(d) (i) Describe Fittig's reaction.

(ii) Describe Williamson's ether synthesis. ( 2 marks)

(e) Give two (2) uses of Grignard reagent in Organic synthesis.( 1 mark)

10.(a) Briefly explain the following terms.

(i) Green manure

(ii) Farm yard manure

(iii) Compost manure

(iv) Organic fertilizer

(v) Artificial fertilizer (5 marks)

(b) The exchangeable hydrogen form 5.0g of oven dry soil was neutralized with $10cm^3$ of 0.1M NaOH. If the total c.e.c of soil was 25 Meq/100g of the soil, calculate:

(i) The concentration of $H^+$ in Meq in 75g of the oven dry soil.

(ii) Percentage of base saturation of the soil sample. ( 10 marks)

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REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

RUVUMA REGION FORM SIX PRE NATIONAL EXAMINATION

132/2

# CHEMISTRY 2

**Time: 3 Hours** **Monday, 9th March 2020 p.m**

## Instructions

1. This paper consists of six (6) questions
2. Answer only five (5) questions
3. Each question in section carries twenty (20) marks.
4. Mathematical tables and non – programmable calculator may be used
5. Cellular phones and unauthorized materials are not allowed in the examination room.
6. Write your examination number on every page of your answer booklet (s).
7. In your calculations you may use the following constants:

   Molar gas constant, R = 8.314 J/Kmol or 0.082 atmmol$^{-1}$K$^{-1}$dm$^3$

   G.M.V = 22.4dm$^3$

   1 litre = 1 dm$^3$ = 1000cm$^3$

   1 Faraday = 96,500 Cmol$^{-1}$

   Atomic masses: H = 1, C = 12, N = 14, K = 39, Cl = 35.5, Ag = 108, Cu = 64, Ca =40

***This paper consists of five (5) printed pages***

1. (a) What is meant by :
   (i) Azeotropic mixture
   (ii) Azeotropic temperature
   (iii) Solubility (03 marks)

   (b) Hydrochloric acid has a boiling point of $85^0$C and water has a boiling point of $100^0$C. When the two liquids are mixed they form non – ideal solution whose azeotropic mixture is obtained when hydrochloric acid is 20.2% and the azeotropic mixture boils at $108.5^0$C.

   (i) What will be produced as distillate and residue when a solution containing 40% hydrochloric acid is distilled?
   (ii) Sketch a labelled diagram to illustrate the boiling point – composition relationship for the hydrochloric acid – water system. (07 marks)

   (c) Liquid X and Y are completely miscible. A certain mixture of the liquids boils at 410K when pressure is $1.63 \times 10^5$ Nm $^{-2}$. If the vapour pressure of X at this temperature is $1.15 \times 10^5$ Nm $^{-2}$ and that of Y is $1.63 \times 10^5$ Nm $^{-2}$, calculate the mole fraction of X;

   (i) In the liquid mixture
   (ii) In the vapour mixture (05 marks)

   (d) In the distribution of benzoic acid between water and benzene, the following results were obtained:

| | | | |
|---|---|---|---|
| $C_1$ in water (mol/dm$^3$) | 1.50 | 1.95 | 2.97 |
| $C_2$ in Benzene (mol/dm$^3$) | 24.20 | 41.20 | 97.00 |

   Assuming that benzoic acid exist as a single molecule in water, show that it exists as a dimer in benzene. (05 marks)

2. (a) (i) Briefly explain how a salt bridge is prepared. (02 marks)
   (ii) Explain the function of a salt bridge in an electrochemical cell. (04 marks)
   (b) With reasons explain wether the following reactions are likely to occur.
   (i) $Zn_{(s)} + 2Ag^+_{(aq)} \rightarrow Zn^{2+}_{(aq)} + 2Ag_{(s)}$
   (ii) $H_{2(g)} + 2Ag^+_{(aq)} \rightarrow 2H^+_{(aq)} + 2Ag_{(s)}$

   Where

   $Zn_{(s)} / Zn^{2+}_{(aq)}$ $E^0 = -0.76$V

   $\frac{1}{2} H_{2(g)} \rightarrow H^+_{(aq)} + e^-$ $E^0 = 0.00$V

   $Ag_{(s)} / Ag^+_{(aq)}$ $E^0 = 0.80$V (04 marks)

(c) Calculate the electromotive force of the given cell at standard temperature.

$Al_{(s)} / Al^{3+}$ (0.05M)//$Pb^{2+}$(0.12M)/$Pb_{(s)}$ (04 marks)

(d) (i) Briefly explain how the molar conductivity of an electrolyte is related to the molar conductivities of its cation and anion. (02 marks)

(ii) Calculate the molar conductivity of ethanoic acid given the following ionic conductivities at infinity dilution:

$CH_3COONa = 91\ Scm^2mol^{-1}$

$HCl = 366.3\ Scm^2mol^{-1}$

$Nacl = 66.4\ Scm^2mol^{-1}$ (04 marks)

3. (a) Explain the terms "acid" and "conjugate base" as used in BrØnsted – Lowery theory of acids and bases. (02 marks)

(b) For each of the following reactions, give the formula of the acid and its conjugate base.

(i) $NH_4 + HCl \rightarrow NH_4^+ + Cl^-$

(ii) $H_2SO_4 + HNO_3 \rightarrow HSO_4^- + H_2NO_3^+$

(iii) $NaNH_2 + NH_4Cl \rightarrow NaCl + 2NH_3$ (03 marks)

(c) The dissociation constant Ka, for the reaction;

$HCO_3^- + H_2O \leftrightharpoons CO_3^{2-} + H_3O^+$ is $4.8 \times 10^{-12}\ M^2$, calculate the pH of 0.02M Sodium bicarbonate solution. (05 marks)

(d) A solution is initially 0.020M in $Cl^-$ ions and 0.020M in $Br^-$ ions. From their solubility products, calculate the concentration of $Ag^+$ ions needed to cause precipitations of each halide. Which of the two halides begins to precipitate? Give reasons.

Given Ksp of:

$AgCl = 1.6 \times 10^{-10}\ mol/dm^3$

$AgBr = 7.7 \times 10^{-13}\ mol/dm^3$ (06 marks)

(e) Calculate the molar solubility of Calcium phosphate given its $Ksp = 1.2 \times 10^{-26}$. (04 marks)

4. (a) Explain the following:

(i) While the pentavalent compounds of Phosphorus are well known, the pentavalent compounds of Nitrogen do not exist.

(ii) Only Lithium react with Nitrogen to form Nitrate in group I elements.

(iii) Anhydrous Magnesium Chloride can not be prepared by heating the hydrated crystals of $MgCl_2.H_2O$.

(iv) Standard electrode potential of elements become more negative down group but the standard electrode potential of Lithium is the most negative in the group. (08 marks)

(b) (i) What is froth – floatation? (02 marks)

(ii) Outline the major stages in metal extractions. (02 marks)

(c) Explain how tin (Sn) is extracted from its ore. (08 marks)

5. (a) Define the following terms:

(i) Polymer.

(ii) Thermosetting polymer.

(iii) Thermoplastic polymer.

(iv) Monomer (04 marks)

(b) Using polymerization of Vinyl Chloride as an example of forming polyvinyl chloride polymer, show tha chain.

(i) Initiating step.

(ii) Propagating step.

(iii) Termination step. (04 marks)

(c) The complex $[Cr(NH_3)_6]^{3+}$ is formed after the addition of excess solution of Ammonia to an aqueous solution of soluble Chromium (III) chloride.

(i) Give the IUPAC name of the complex $[Cr(NH_3)_6]^{3+}$

(ii) What is the oxidation state of Chromium in this ion?

(iiii) Give the structure of the ion and explain briefly a reason for its shape. (06 marks)

(d) Draw the geometry of the three isomers shown by the compound $CrCl_3.6H_2O$. (06 marks)

6. (a) Compound D, $CH_3COOCH_2CH_3$ is an ester.

(i) Name the compound D

(ii) Compound D was hydrolysed by heating with aqueous Sodium hydroxide an alcohol E was formed, together with another organic product F, give the structural formula of compound E and F. (03 marks)

(b) Two compounds A and B all are Carbonyl compounds have the same molecular formula $C_3H_6O$.

(i) Draw the possible structural formula for A and B.

(ii) Describe the tests (reagent, conditions and observations for each compound) that would show that A and B are carbonyl compounds.

(iii) Suggest the class of another compound having the same molecular formula that is not a carbonyl compound. What type of isomerism does it

exhibit with respect to the above two compounds. i.e A and B. (07 marks)

(c) An organic compound S is composed of 64.86% C, 13.5% H and 21.64% O. S reacts with $PCl_5$ to form Compound P and Q which produce dense white fume with aqueous ammonia. S also reacts with the mixture of Iodine and Sodium hydroxide to form Sodium salt R and Triidomethane.

(i) Determine the empirical formula of S.

(ii) Find the molecular formula of S given that its molecular mass is equal to 74.

(iii) Give the structural formula of five (5) possible isomers of S.

(iv) Name the compounds S, P, Q and R.

(v) Write the chemical equation for the reaction between A and $PCl_5$ and a mixture of $I_2$ and N*a*OH.

(10 marks)

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RUVUMA REGION FORM SIX PRE NATIONAL EXAMINATION

132/3A

# CHEMISTRY 3A

**(Actual Practical)**

**Time: 3.20 Hours** **Tuesday, 10th March 2020 a.m**

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**Instructions**

1. This paper consists of three (03) questions.
2. Answer all questions.
3. Question number one (1) carries 20 marks and the other two (2) carries 15 marks each.
4. Mathematical tables and non programmable calculators may be used.
5. Cellular phones and unauthorized materials are not allowed in the examination room.
6. Write your examination number on every page of your answer booklet(s).
7. In your calculations you may use the following:

   Atomic masses: H = 1, C = 12, O = 16, Cl = 35.5, N*a* = 23.

   Molar gas constant = 8.314 J/Kmol

   Specific heat capacity of water (SHC) = 4.2 J/gK

   Density of solution, $\rho = 1.0 g/cm^3$

*This paper consists of four (5) printed pages*

1. You are provided with the following solutions.

   $X_1$: The solution containing Hydrochloric acid and Acetic acid

   $X_2$: 0.1M *NaOH*

   $X_3$: Phenolpthalein indicator

   $X_4$: Methyl orange indicator

**Procedure:**

(i) Pipette 25 $cm^3$ of Solution $X_1$ into a 250 $cm^3$ conical flask.

(ii) Add two to three drops of $X_4$.

(iii) Fill the burette with solution $X_2$.

(iv) Titrate solution $X_1$ against $X_2$ until colour change is observed.

(v) Record the first titre value

(vi) Add two to three drops of $X_3$.

(vii) Continue to titrate until the second colour change is observed.

(viii) Repeat your titration step (i) – (vii) three more times and record your results in a tabular form as below.

**Results**

The volume of pipette used was _____ $cm^3$

The volume of burette used was _____ $cm^3$

**Burette readings**

| **Titration number** | **Pilot** | **1** | **2** | **3** |
|---|---|---|---|---|
| Final volume using $X_4$ ($cm^3$) | | | | |
| Final volume using $X_3$ ($cm^3$) | | | | |
| Initial volume ($cm^3$) | | | | |
| Titre value using $X_4$ ($cm^3$) | | | | |
| Titre value using $X_3$ ($cm^3$) | | | | |

**Summary**

_____ $cm^3$ of solution $X_1$ required _____ $cm^3$ of solution $X_2$ when $X_4$ was used and _____ $cm^3$ when $X_3$ was used as indicator.

**Questions**

(a) The colour change of the titration using $X_4$ was from _____ to _____ and when $X_3$ was added the colour change was from _____ to _____

(b)(i) The first titre value signifies titration of _____ against SodiumHydroxide.

(ii) Methyl orange (MO) is a good indicator for the titration of _____ against strong base.

(c) Calculate the concentration of acid solution $X_1$ in $g/dm^3$ when:

(i) $X_4$ was used.

(ii) $X_3$ was used.

2. You are provided with the following:

$K_1$: 0.50M Hcl

$K_2$: 0.25M Hcl

$K_3$: 1g NaOH pellets

$K_4$: Distilled water

**Theory:**

A neutralization reaction is used to illustrate Hesse's law of constant heat summation in this context carried out by two separate routes.

$NaOH_{(s)} + Hcl_{(aq)} \rightarrow NaCl_{(aq)} + H_2O_{(l)} \ldots\ldots\ldots\ldots \Delta H_1$

**Step:**

(a) $NaOH_{(s)} + Water \rightarrow NaOH_{(aq)} \ldots\ldots\ldots\ldots \Delta H_2$

(b) $NaOH_{(aq)} + HCl_{(aq)} \longrightarrow NaCl_{(aq)} + H_2O_{(l)} \ldots\ldots\ldots\ldots \Delta H_3$

**Procedures for route 1.**

(i) Put 100 $cm^3$ of $K_1$ into beaker and record its temperature.
(ii) Add 1g of $K_3$ and stir using a glass rod until the whole sample has dissolved.
(iii) Record the highest temperature reached.

**Results:**

The initial temperature _____

The final temperature _____

**Procedure for step (a)**

(i) Put 50 $cm^3$ of $K_4$ into a beaker and record the temperature.
(ii) Add 1g of $K_3$ and record the highest temperature reached.
(iii) Keep the solution for further use.

**Procedure for step (b)**

(i) Put 50 $cm^3$ of $K_1$ into a beaker and record the temperature
(ii) Record the temperature of $NaOH$ solution obtained in route 1 step (a) above then add it to the acid $K_1$ in the beaker.
(iii) Stir a mixture and record the highest temperature reached.

**Questions**

1. What is the aim of this experiment?
2. Calculate the value of $\Delta H_1$, $\Delta H_2$ and $\Delta H_3$ for experiment route 1, step (a) and (b) respectively using the equation of the form.
   $\Delta H_1 = -MC\Delta T$
   Where: $\Delta H$ = change in heat
   M = mass of solution
   C = specific heat capacity of water
3. From the question (2) above, show that $\Delta H_1 = \Delta H_2 + \Delta H_3$

   For proving law of constant heat summation.

3. A sample salt R contains one cation and two anions. Carry out the Qualitative procedures then

answer the questions that follow.

| Experiment | | Observation | Inference |
|---|---|---|---|
| (i) | Appearance of sample R | | |
| (ii) | Heat the sample R in a dry test tube | | |
| (iii) | Dissolve about 2g of the sample R in water then divide into five portions, to the first portion add Potassium ferrocyanide. | | |
| (iv) | To another portion add N*a*OH then warm observe the changes. | | |
| (v) | To another portion add excess dil. $HNO_3$ the $AgNO_3$. | | |
| (vi) | To another portion add dil. HCl then $BaCl_2$ | | |

The cation confirmed present is _____ and the anions are _____ and _____

(a) Anions present are _____ and _____

(b) The salt sample R contains _____ and _____ salts.

(c) Write down the decomposition reaction that occurred in (iv) after addition of N*a*OH.

(d) Give two uses of the metal you have identified.

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REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

RUVUMA REGION

FORM SIX PRE-NATIONAL EXAMINATION 2020

133/1 BIOLOGY 1

TIME : 3 HOURS 04 March 2020 PM

INSTRUCTIONS

1. This paper consists of ten( 10) questions in section A and B.
2. Answer all questions in section A and any two (02) in section B.
3. The mark allocation for each question is indicated at the beginning of each section.
4. Cellular phones and other unauthorized materials are not allowed in the examination room.
5. Write your index number on every page of your answer sheet(s)

| FOR EXAMINER'S USE ONLY | | | |
|---|---|---|---|
| QUESTION NUMBER | PUT(√) | SCORE | EXAMINER'S INITIALS |
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |
| TOTAL | | | |

This paper consists of four (4) printed pages

## SECTION A ( 70 Marks)

**Answer all questions in this section. Each question carries 10 marks.**

1. Peter, form five student at Kigonsera High School was examining a plant tissue using an electron microscope. He recognized that the cells of the tissue contained sausage shaped organelles surrounded by double membrane, the inner membrane folded and projected in to the inner space filled with grainy materials.

   (a) (i) Name the organelles with the feature stated above(a)(i) in plant cells.

   (ii)State the main role of the organelles named in (a)(i) above in plant cells.

   (iii) Is the organelles named in (a)( i) above present in an animal cell?

   ( b)( i) Draw a well labelled diagram of the organelles named in (a)(i) above.

   (ii)State any three (03) adaptations of the organelles to the role named (a)(ii) above.

2. (a) Homo sapiens is the scientist name for human being.

   (i) Outline five observable rules that have been used to give human its scientific name.

   (ii) Why giving scientific name to human being is significant? (Give two reasons).

   (b)"The effort to classify organisms place emphasis on both the similarities and differences among organisms". Briefly explain this statement using suitable examples.

3. (a) Suggest the conditions in which the following may be the limiting factor in photosynthesis.

   i. Light intensity
   ii. Carbon dioxide concentration.
   iii. Temperature.

   ( b) How is the ileum adapted for food absorption?

4. (a) Give reason why?
   (i) Nerve impulse travel faster in myelinated nerve fibre.
   (ii) Cat can see well at night.

   ( b ) The membrane of resting nerve fibre is said to be in polarized state. What does this statement mean?

   ( c) State two ways in which vision using cones differ from vision rods.

5. Three types of cells are found in the alveolus. Using your own knowledge.
   (a) Explain the roles of the three cell types in the alveolus.
   (b) Sometimes babies born prematurely display breathing difficulties, a condition known as Respiratory Distress Syndrome ( RDS).Without treatment they may become exhausted and die.

   ( i) Suggest the cause of this conditions.

   ( ii) Explain why babies become exhausted.

6. (a) Differentiate between an open blood system and closed blood system. Give one example for each.
   ( b) How is the structure of xylem tissue suited to its function of water transport.

7. ( a) Figure X and Y below represent two reproductive structures found in flowering plants.

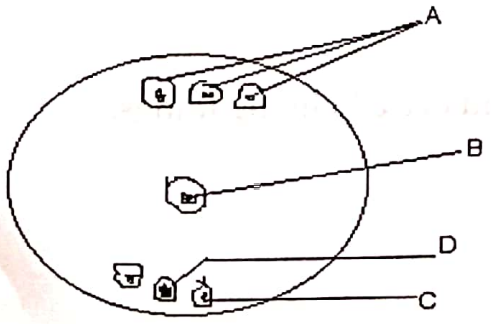


Figure X

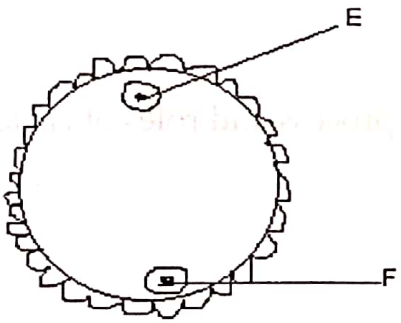


Figure Y

(i) Identify the structures X and Y.

(ii) Name the plant structures in which structure X and Y are formed.

(iii) Name the structure represented by letters A,B,C,D, E and F.

(b) Distinguish between meiosis and mitosis under the following guidelines( Give only one differences for each)

i. Occurance.

ii. Process.

iii. Genetic consequence.

## SECTION B ( 30 Marks)

**Answer only two questions from this section .Each question carries 15 Marks.**

8. (a) When doing an experiment on enzymes, explain why it is necessary to control the temperature and pH of the solutions involved.

( b) When a small amount of chemical X is added to a mixture of an enzyme and its substrate, the formation of reaction product is reduced. Increasing the amount of X in the solution causes further reduction in products. State with reasons, the likely nature of chemical X.

9. (a) Draw the diagram of mature mammalian ovum and label its parts.

( b ) Describe the events which take place during fertilization of a mature mammalian ovum.

10.Describe the process and roles of citric acid cycle in living things.

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# REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

## FORM SIX PRE-NATIONAL EXAMINATION MARCH 2020

## RUVUMA REGION

133/2 BIOLOGY 2

( For both school and private candidates)

TIME: 3 HOURS 05 MARCH 2020 AM.

INSTRUCTIONS.

1. This paper consists of six questions.
2. Answer any five (05) questions.
3. Each question carries 20 marks.
4. Cellular phones are strictly prohibited in the examination room.
5. Write your examination number on every page of your answer sheet(s)
6. Use pencil to draw diagrams.

| FOR EXAMINER'S USE ONLY | | | |
|---|---|---|---|
| QUESTION NUMBER | PUT(√) | SCORE | EXAMINER'S INITIALS |
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| TOTAL | | | |

This paper consists of four (4) printed pages

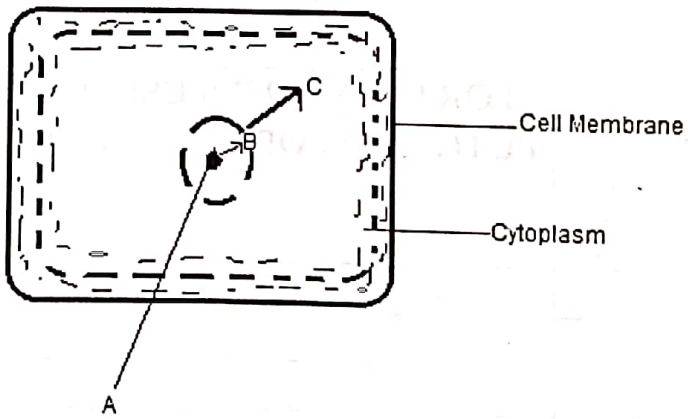
1. (a) What are the differences between yeast and bacteria basing on the following criteria.
   i. Feeding.
   ii. Cell division.
   iii. Cell type.
   iv. DNA.
   v. Organelles.

   (b) Allocate the following organism in their appropriate phyla/Divisions.

   i. Dropteris SPP
   ii. Homo sapiens. chordata
   iii. Lumbricus terrestris.
   iv. Funaria SPP. Bryo
   v. Rhizopus SPP

   ( c ) How bacteria and fungi are useful in industrial and agricultural development.

2. (a) Study the figure shown in the diagram below which show the flow of information with the chloroplast Eukaryotic cell.




   2(a) (i) What is the name given to the flow of information A B C?

   (ii) Give the name of specific part of structure presented by letter A and B.

   (iii)Give the name and describe the process taking place from A to B.

   (iv) Give the name of the process taking place between B and C and hence give only one main enzyme involved in the process.

( b) In sweet pea , the purple colour of the flower is determined by the dominant genes C and P. In the absent of either, the flowers are white. Gene C control the production of materials necessary for formation of a purple colour where gene P control the conversion of material into purple pigment. If the $F_1$ CcPp is purple, show clearly with the aid of cross how you can determine phenotypic ratio of $F_2$.

3. (a) Illustrate the stages of mitosis in animal cells.

(b) Mrs Mkulima being educated that the seeds can stay dormant for long time without losing viability, she stored her maize seeds for a time waiting for sowing them in next seasons, once she was ready to use them, she found that the seeds were no longer viable. What was probably wrong?

4 (a) Explain how each of the following support evolution:

i. Comparative Biochemistry.
ii. Comparative Embryology.
iii. Palaeontology.
iv. Adaptive radiation

( b) Describe the mechanisms that bring about speciation ( 05 points)

5 (a) ( i) Explain the problem of osmotic pressure when fish from Lake Victoria is transferred into Indian ocean.
( ii) Why desert dwelling animals have long loop of Henle?
( b) Clearly show the role of hypothalamus in temperature regulation.

6 (a) Explain the concept of population explosion and their consequences.
(b) Explain the concept of energy flow in the ecosystem.

THE UNITED REPUBLIC OF TANZANIA

THE PRESIDENT'S OFFICE

REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

RUVUMA REGION FORM SIX PRE-NATIONAL EXAMINATION

113/2

# GEOGRAPHY 2

TIME:3:00 HOURS Thursday 12th March, 2020 p.m

INSTRUCTIONS:

1. This paper consists of seven (07) essay type questions.
2. Answer a total of five (05) questions of which question number one (1) is compulsory.
3. Each question carries twenty( 20) marks.
4. Cellular phones and unauthorized materials are not allowed in the examination room.
5. Write your examination number on every page of your answer sheets.

| QUESTION NUMBER | PUT(√) | SCORES | EXAMINER'S INITIALS |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| TOTAL | | | |

This paper consists of two (2) printed pages

**Answer any five (05) questions, question number one (1) is compulsory.**

1. The population growth in Sub-Saharan Africa is unsustainable. Account for the statement.

2. Outline six strategies for man power mobilization in Tanzania since independence.

3. Organic farming involves the use of organic methods in organic soil management. Point out six methods of organic soil management.

4. Why is mining referred to as robber industry?

5. Describe eight (8) fish processing methods used in Tanzania.

6. Analyze four (4) problems facing tourism sector in Tanzania, suggest four (4) ways of solving the problems.

7. Provide a clear account on the eight (8) challenges facing Tanzania to modernize her manufacturing industries.

1:
- mortality rate
- fertility rate
- migration
- Employment