Name.....**personalno**...../...../.....

Signature.....

553/1

3BIOLOGY.

Paper

MAY/JUNE-

2023

***1½*hours.**

EAGLE'SNESTSECONDARYSCHOOLKAMPALA

COMPETENCYBASEDCURRICULUMASSESSMENT

BEGINNINGOFTERMIIEXAMINATIONS2023

UgandaLowersecondarycertificateofeducation

BIOLOGYPAPER

S.1

TIME:1Hr30Mins

- Attempt***all***thequestionsinsection**A**and***onlyone***questionfromsection**B**
- Diagramswherenecessarymustbedrawnusingasharpenedpencil.

ForExaminersuseonly

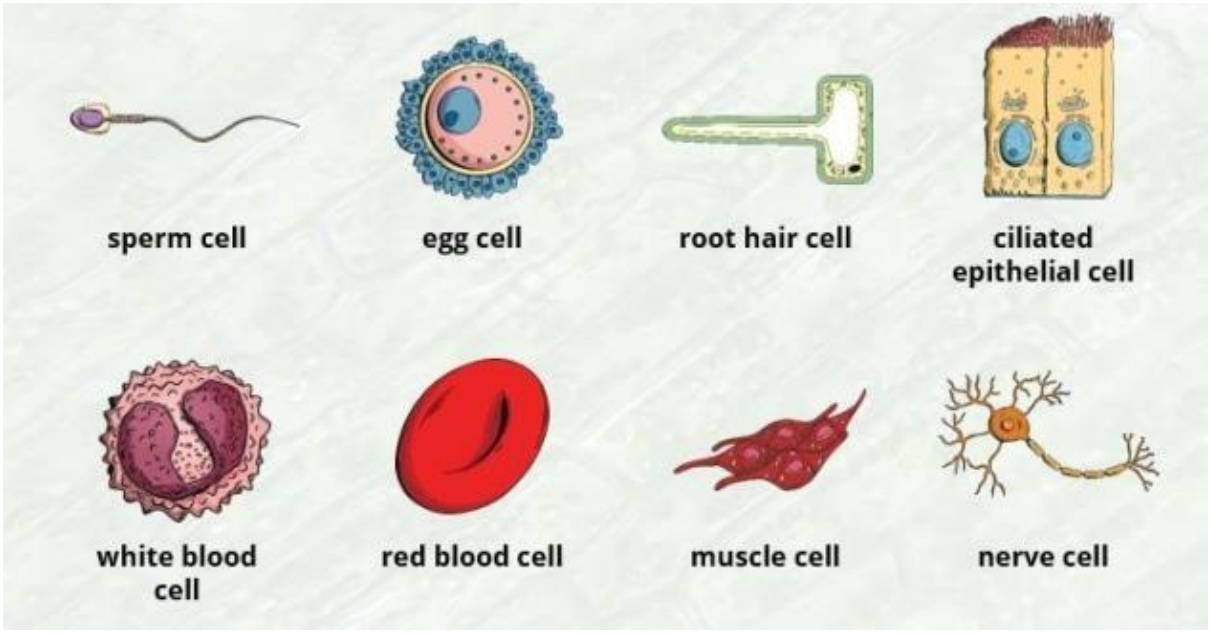
Question	**Marks.**	**Comment**
1		
2		

3		
4		
5		

SECTIONA.

Attemptallthequestionsinthissection

1.(a)Cellsinmulticellularorganismshave***uniquestructures***whichenablethemtoperformaspecificrole/function.Belowaredifferentstructuresofspecialisedcellsinman.Usethemandanswerthequestionsthatfollow



(i)Giventhefollowingadaptationsofdifferentcellswhosestructuresaregiven above.Fillinthespacesprovided.(08marks)

.....hasbiconcaveshapeandlacknucleus;whichincreasesitssurfaceareaforabsorptionandcarriageofoxygeninthebody.

.....iselongated;toincreasethesurfaceareaforabsorptionofmaterialssuchaswaterandmineralsalts.

.....hastinyhairlikestructures;whichsweepmucusandbacteriaawayfromairalongtherespiratorytract.

.....haslargevolumeofcytoplasm;whichincreasesitssurfaceareamakingiteasierforthedevelopmentofembryowithinandstorageoffood.

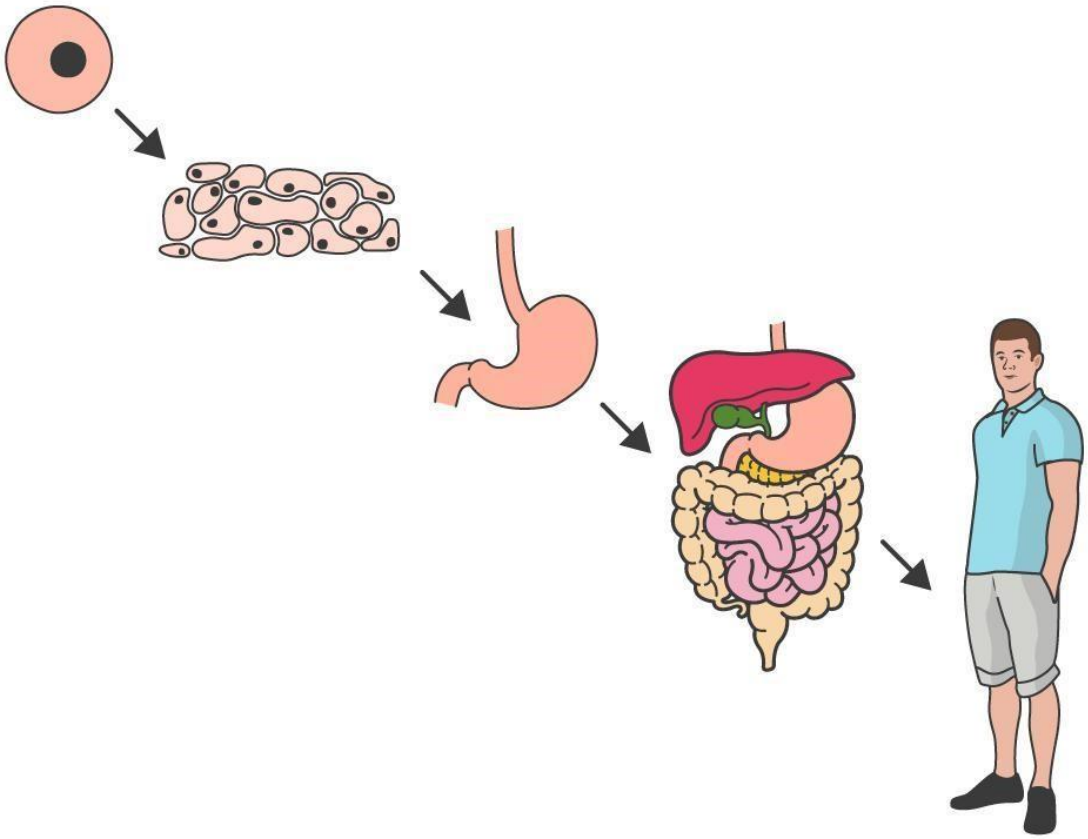
.....haslongfibre;whichcarrysignalsupanddownthebodyoverlongdistances.

.....containsproteinfibres;whichcontractwhenenergyisavailabletoaidinmovement.

.....hasatail;whichitusestopropeltowardstheovumtofertilizeit.

.....hasanirregularshapesocanchangeshape;whichmakesitpossibletoengulfbacterialandothergermsanddestroythem.

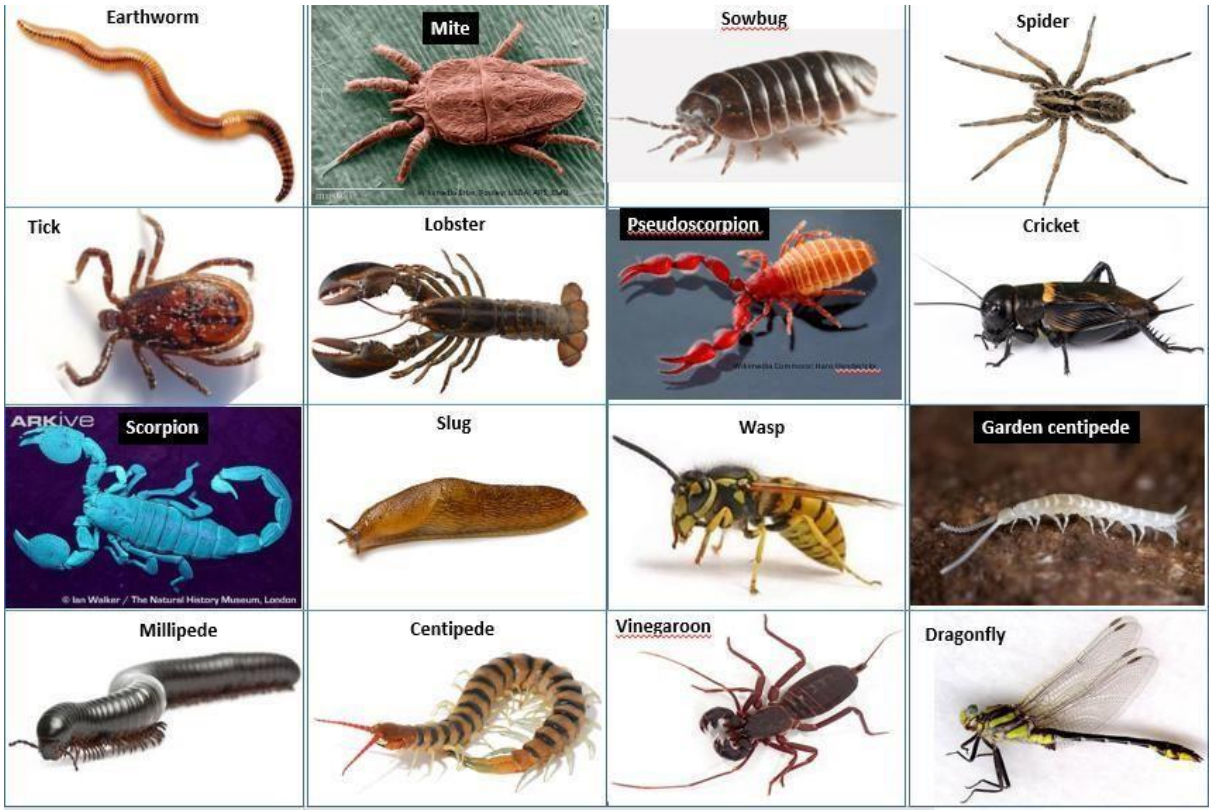
(b)Thelifeprocessesofhumanbodyaremaintainedatseverallevelsofstructuralorganisation.Belowaredifferentstructuresoforganisationinman.Usethemandanswerthequestionsthatfollow.



(i)Statethelevelsofstructuralorganisationinmanshownabove.(statethem inorderfromsmallesttohighestlevel)(04marks)**……,……,……..,……,……**

(ii)Labeloneachstructureabovethelevelsofstructuralorganisationstatedin (a)(i)(02marks)

2.Whilestudyingabout***classification***oforganisms,severalchartsweredisplayedwit hseveralorganisms.Thechartsenablestudentstoprocesscontentandmakeconn ectionsanddifferencesaboutorganismsmoreeasily.Belowisonechartwithdiffer entorganisms.Useitandanswerthequestionsthatfollow.



(a)StatetheKingdomtowhichthealltheorganismsabovebelongs.(01mark)

.....

(b)Fromthechartabove;whichorganism(s)belong(s)to,

(i).Phylummollusca,(01mark)

.....

(ii).Phylumannelida.(01mark).....
.....

(c).Statethephylumtowhichtherestoforganismsbelongsapartfromthose in(b)(01mark)

.....

(d)Usingobservablefeatures;

(I) Statethedifferencesbetweenspiderandwasp.(04marks)

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(II) similaritiesbetweenmillipedeandtick.(03marks)

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(e)Giventheclassesofclassificationbelow.

Classinsecta	***Classcustacea***	***Classarachnida***	***ClassChilopda***

Statetheclassofclassificationtowhichthefollowingorganismsbelong.

(i).Tick.(01mark).....

.....(ii).Centipede.(01mark).....

.....(iii).Dragonfly.(01mark).....

.....(iv).Lobster.(01mark)

.....(

f)Whyisthereaneedtoclassifyorganisms?(01mark)

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.....

(3)(a)Thestructureandfunctionofawholeorpartofaleafcanbemodifiedoverthecourseofevolutionastheplantadoptstotheparticularenvironment.Thesearecalled***modifiedleaves***whichperformspecialisedfunctionotherthanthe***usualprimaryfunctions.***Studythestructurebelowandanswerthequestionsthatfollow.

(i)Nametheleafmodificationshownbythegardenpea.(01mar)

.....(ii)Statetheadaptationoftheleafmodificationnamedabovetofunctionits function(02marks)

.....

.....

(iii)Stateanytwoleafmodificationsandtheirfunctionsapartfromtheone showninfigure.(04marks)

.....

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.....

(iv)Stateanyone***primaryfunction***ofleaves.(01mark).....

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.....

(b)AgroupofS.2studentsobtaineddifferentkindsofleavesfromtheirschoolgardena ndobservedtheirstructuralfeatures.Belowistableshowingtheobservablefeatures oftheleavesrecordedbyS.2student.

Leaf	**Venation**	**Margin**	**Lamina**	**Stalk**
P	Network	Entire	Smooth	Petiole
Q	Parallel	Entire	Rough	Sheath
R	Parallel	Serrated	Smooth	Sheath
S	Network	Serrated	Rough	Petiole

Usetheobservablefeaturesshowninthetableaboveandconstructa dichotomouskeytoclassifytheleaves.(03marks)

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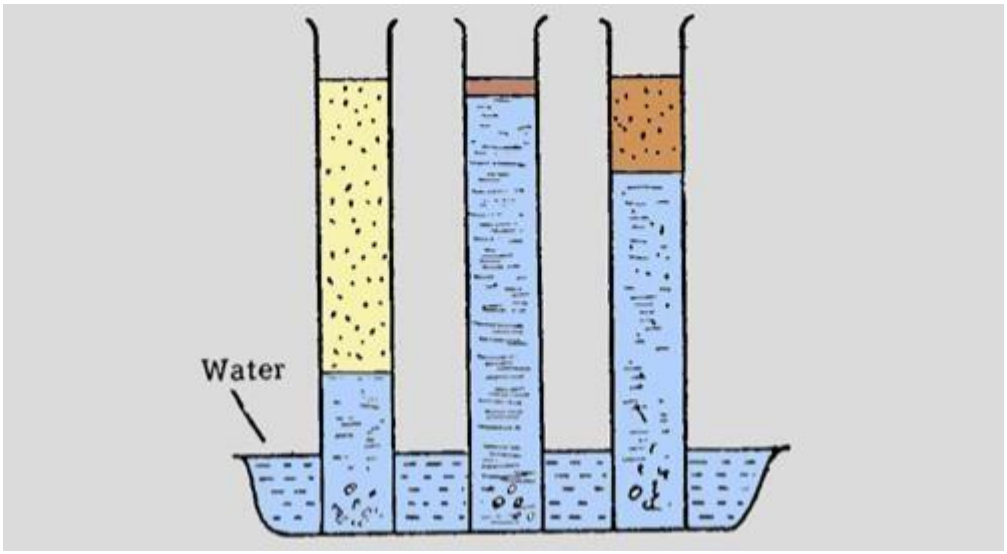
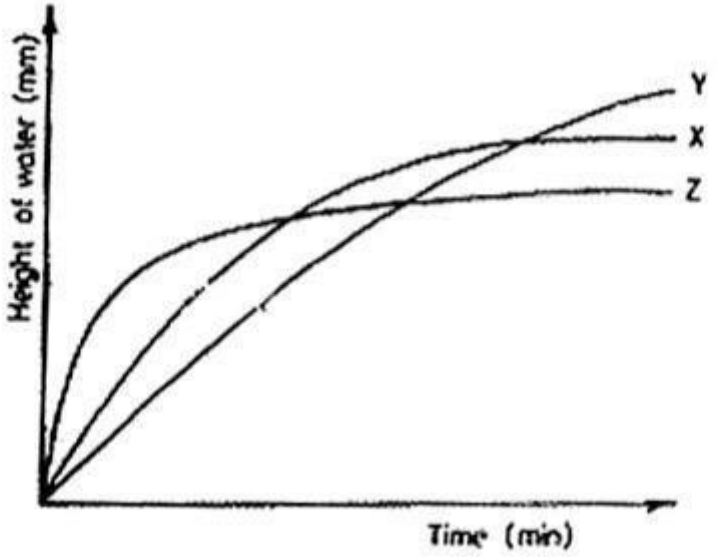
4.Threesamplesofsoil**X**,**Y**and**X**wereobtainedbyagroupofS.2andcarriedoutanexp erimentasthesetupbelow.Theymeasuredequalamountofsoilandplacedeachsoils ample**X,Y**and**X**ineachcapillarytubeanddippedthetubesintoatroughofwater.Thes etupbelowshowsthe***end***of

SoilZSoilYSoilX



Duringthetimeofexperimentuptotheendofexperiment,theheightofwaterriseine achsoilsamplealongeachtubewasmeasuredandrecordedatregularintervals.Agra phofwaterriseagainsttimewasplottedasbelow.



(a)AsaS.2studentwhohasstudiedabouttheproperties ofsoils,statetheaim oftheexperiment.(01mark).....
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.....

(c)Usingthegraph;compareandexplainthewaterriseineachsoilsample**X:Y**

and**Z**withtime.(08marks).....

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(d)Statewhichofsoilsample**X**,**Y**and**Z**is,

(i)Loamsoil.(01mark).....

.....(ii)Sandsoil.(01mark).....

.....

(iii)Claysoil.(01mark).....

.....

SECTIONB.

Attempt***any1question.Allquestionscarryequalmarks.***

5.OneS.2student;Kasololostakeyforhersuitcaseonedayafterschoolvisitation.Her parentsvisitedherandamongpackagewasaloafoftiptopsweetbread.Afteraweek;s hebrokethesuitcaseonlytofindherbreadappearingasindiagrambelow.Usethediag ramtoanswerthequestionsthatfollow.

(a)Whatspecificnameisgiventotheorganismthatdevelopedon Kasolo'sbread?

(01mark)

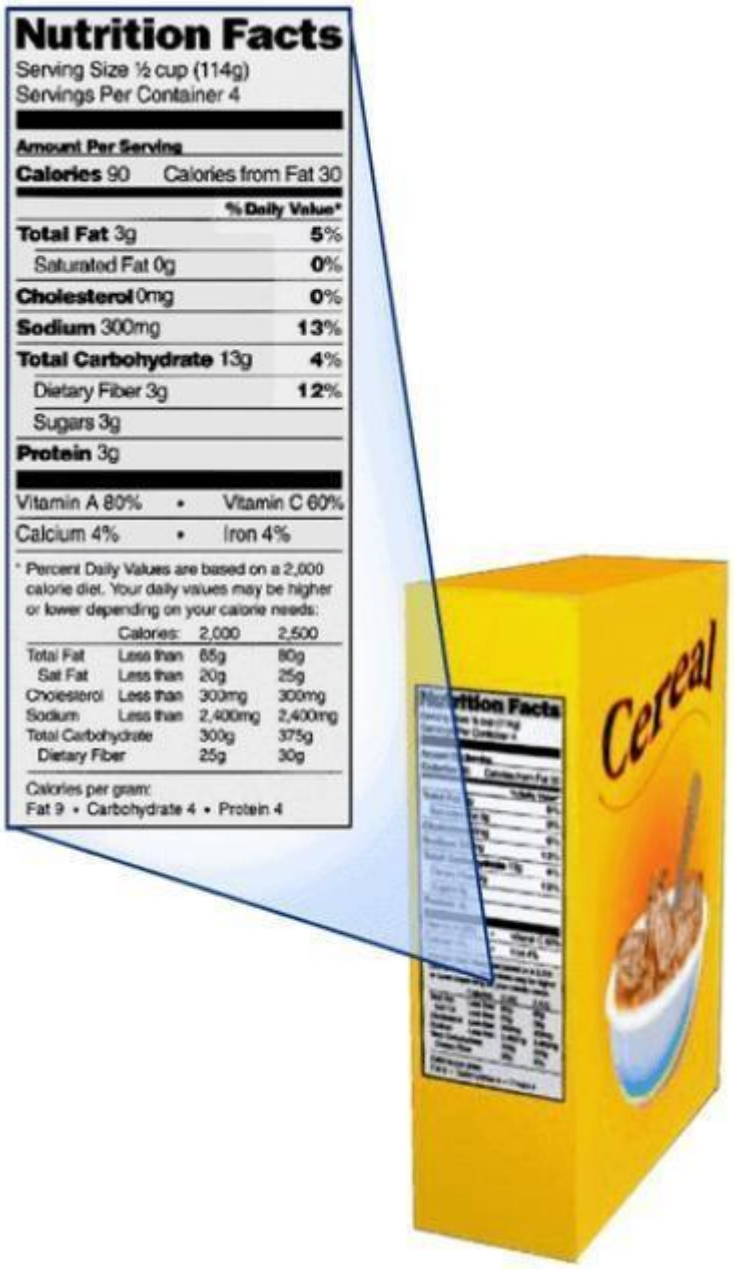
(b)Statethe***group***oforganismstowhichtheorganismnamedin(a)belongs.

(01marks)

(b)Coveringthebreadthoffundamentalandappliedresearchinvolvingtheaboveorg anismsstatedin(b)above,the***advancementinbiotechnologyinvolvingsuchorgani***

smshasgreatlybenefitedmanmuchassomeorganismsarealsoharmfultoman"As aS.2studentwhohasstudiedthe aboveorganisms;justifytheabovestatement(08marks)

6.Nutritionisacriticalpointofhealthandbetternutritionisrelatedtoimprovedinfant ,childandmaternalhealthy,strongerimmunesystems,saferpregnancyandchildhea lth,lowerrisksofdiseasesandlongevity.Usingnutritionalcontentgivenonthisprodu ct;useittoteachthepeopleinyour villagewhyeverychildmustbegiventhisproductathomeasadietary supplement.(10marks)



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