ANANDA COLLEGE - COLOMBO 10

09 | E | I

Final Term Test - 2022 January
G.C.E. (Adv. Level) Examination - 2022 February

Biology I **Grade 13** **Time : Two Hour**

Name :- ..... Index No. :- ..... Class .....

N.B. :

- *Answer **all** questions.*
- *In each of the questions **1 - 50**, pick one of the alternatives from (1), (2), (3), (4), (5) which is correct or most appropriate and mark your response on the answer sheet with a cross (**X**) on the number of the correct option.*

01. Select the incorrect statement regarding the characteristics of organisms.
(1) Adaptation is a peculiarity of structure, physiology, or behaviour.
(2) Gene is the basic unit of heredity.
(3) Movement of organisms occurs as a result of irritability.
(4) Growth and development are two consequent processes.
(5) Organizing of lower level components in a methodical pattern in upper level help to increase the efficienly.

02. Select the correct statement regarding water.
(1) Due to the high heat of vaporization, water will function as a thermal buffer.
(2) When the ionic nature increase solubility also increase.
(3) Water skaters can walk on the surface of water due to the cohesion between water molecules.
(4) The rate of break and reform of hydrogen bonds is high in liquid form than the solid form.
(5) There are three H bonds around one water molecule.

03. Select the basic structural components of organisms among the followings.
A. Keratin
B. Phospholipids
C. Starch
D Cellulose
E Glycogen

(1) ABC only (2) ABD only (3) ACD only
(4) BCD only (5) ABE only

04. Select the incorrect statement about the cell division.
(1) Most cells in the human body are actually in the Go phase.
(2) In the prophase I of meiosis, two sister chromatids are connected to a one pole.
(3) Spindle includes the centrosomes, spindle microtubules and the aster.
(4) Nuclear envelop fragments and disappears in the prometaphase of mitosis.
(5) DNA wind around histone beads and form chromatin in the metaphase.

05. Which of the following statement is correct regarding the evolution of biological diversity on earth?
(1) Concentration of atmospheric oxygen begins to increase during the Hadean eon.
(2) Diversification of algae during the Archean eon.
(3) The earliest tetrapods formed about 365 million years ago.

06. Following events relate with the history of classification of organisms.
A - Ernest Haeckel introduced the kingdom - Protista.
B - Robert H.Whittaker introduced the five kingdom systems of biological classification.
C - Three domain system of Carl Woese.
D - Introduction of binominal nomenclature of species.
Select the correct sequence of above.
(1) ACDB (2) DABC (3) ADBC
(4) ACDB (5) DBAC

07. A student found a plant with following features in a field study.
(1) 5 cm long upright stem.
(2) dichotomously branching roots.
(3) small leaves.
Which of the following is the common feature to the phylum that the above plant belongs?
(1) Differentiated into leaves, stems and rhizoids.
(2) Have a strobilus.
(3) All are heterospores.
(4) Have a rhizome.
(5) Highly dissected leaves.

08. Which of the following is not a characteristic feature of chordata.
(1) Longitudinal, flexible rod called notochord.
(2) Single nerve cord located ventral to the notochord.
(3) Muscular post anal tail.
(4) Pharyngeal slits.
(5) Deuterostome origin.

09. Which of the following is correct about the xylem and phloem.
(1) Angiosperms and Gimnosperms phloem tissue consist of sieve tube elements & companion cells.
(2) Vessel elements are thin cells with tapering ends.
(3) Vessel elements present in all angiosperms and some gymnosperms.
(4) There is no living cells in xylem tissue while no non living cells in phloem tissue.
(5) Companion cells help only in phloem loading and controlling the activity of adjacent sieve tube elements.

10. Which is the incorrect statement about radial transport of water.
(1) The apoplastic route consists of cell walls and interior of dead cells such as vessel elements and tracheids.
(2) Due to the least resistance, most amount of water transport through apoplast pathway.
(3) Active transport involve in transport of solutes from symplast to apoplast.
(4) Water and minerals have to undergo a selective permeability due to the casparian strips of the endodermis.
(5) Symplast consists of cytosol and plasmodesmata.

11. Which is incorrect about the plant response to gravity.
(1) Gravitropism ensures the growth of the shoot towards light.
(2) Plants may detect gravity by the settling of statoliths.
(3) As Ca^{2+} and auxin get accumulated at lower side of elongation zone of root, more rapid growth on lower side can be observed in roots.
(4) Statoliths are rich with starch grains.
(5) The aggregation of statoliths at lower points of root cap cells causes lateral transport of auxin.

12. Which is the matching pair about the plant growth substances and their roles.

	Plant growth substance	function
(1)	Auxin	Stimulate seed germination
(2)	Gibberellins	Stimulate pollen tube growth
(3)	Cytokinins	Promotes leaf senescence
(4)	Abscisic acid	Stimulate stem elongation
(5)	Ethylene	Delay leaf senescence

13. Which of the following is correct regarding the plant nutrition.
(1) Corolloid roots of *Cycas* with *Rhizobium* is an example for symbiosis.
(2) All the plants with chlorophils are autotrophs.
(3) Commensalism is an interaction between two species which benefits one and neither harm nor benefits the other.
(4) Symbiosis is an ecological relationship between two organisms either the same species or two different species.
(5) The plant should get equal amounts of micro and macro elements for a better growth.

14. Which is the correct response about animal tissues.
(1) Epithelial tissue is a gap filling tissue among the organs of the body.
(2) Heparin is an anticoagulant which is produced by eosinophils of blood.
(3) Osteoblasts are the mature bone cells that maintain the bone tissue.
(4) Several chondrocytes can be present within one canal of cartilage tissue.
(5) Smooth muscles can be seen in the digestive track, Diaphram, Urine bladder and the alveolar walls.

15. Which is correct about animal nutrition
(1) Filter feeders feed on small pieces of food in the water that passes through the gill.
(2) Maggot is a substrate feeder.
(3) All the animals have a digestive track.
(4) Maggot is a bulk feeder.
(5) All the animals have holozoic mode of nutrition.

16. Which is correct regarding the human digestive track.
(1) Cardiac sphinter consist of longitudinally arranged smooth muscles.
(2) Parietal cells of the stomach secrete HCl.
(3) Amino acids like Alanin and Cistine can be synthesized within the body.
(4) Amino acids, Vitamins and all glucose molecules are actively transported in to the epithelial cells while the absorption of nutritients.
(5) Gastrin hormone secrets even before the food enter to the stomach.

17. Which is correct about respiratory pigments.
(1) Oxyhemoglobin breaks down within the tissues with high partial pressure of oxygen.
(2) Haemoerythrin and chlorocruorin are present in some annelids.
(3) A respiratory pigment consist of one or several polypeptide chains.
(4) Solubility of oxygen is high in watery medium including blood.
(5) All Arthropods have haemocyanin as the respiratory pigment.

18. Which answer consist of animals that not having highly vascularized respiratory structure.
(1) Prawn , crab, Spider
(2) Mite , Millipede , Centipede.
(3) Cockroach , Centipede , leech.
(4) Insects , Spider ,
(5) Fish

19. Which is correct about the homeostatic control of breathing.
(1) Main breathing regulating center found at the fore brain.
(2) The O_2 level has high influences on the breathing control centers.
(3) P^H Change in blood vessels is detected by the sensors in medulla oblongata.
(4) There are a pair of breathing control centers found in medulla oblongata.
(5) There are additional nerve circuits in the medulla oblongata to regulate homeostatic control of breathing.

20. Which is correct regarding the innate immunity.
(1) Specific responses for specific pathogens.
(2) Supply a general and long term protection against the pathogens and foreign invaders.
(3) Innate immunity can be categorized into three groups as external defence, internal defence and inflammatory responses.
(4) Only the skin act as a physical barrier in external defence.
(5) Lysozyme present in tears, Saliva, Sweat and mucus.

21. Which of the following is correct.
(1) Some persons have allergens that can induce hypersensitive reactions.
(2) Most of the allergens stimulate the production of plasma cells.
(3) Breathing difficulty is a common allergy symptom.
(4) In type II Diabetes mellitus , T cells attack the insulin producing pancreatic beta cells.
(5) Many auto immune diseases affect males than females.

22. Which of the following is correct regarding the process of urine formation.
(1) Filtration of the blood under pressure in to the cavity of the Bowman's capsule is called ultrafiltration.
(2) Useful molecules , ions and water from glomerular filtrate are selectively reabsorb in to the blood capillaries.
(3) The time remain in the glomerulus is adequate for the entire filtration of substances.
(4) Secretion is the process by which foreign materials and substances not required to the body including waste are entered in to the interstitial fluid from filtrate.
(5) Tubular secretion is important to maintain the normal P^H in the blood.

23. Which one is correct regarding the transmitting of impulses through an axon.
(1) In a non conducting neuron, K^+ concentration inside neuron is high and the Na^+ concentration in outside is low.
(2) Na^+ and K^+ ions actively exchange through the Na^+ and K^+ channels in the plasma membrane.
(3) Neuron cannot respond to another stimulus, owing to inactivation of sodium channels.
(4) Repolarization results to Na^+ inflow in response to a stimulus.
(5) Sodium channels are closed to avoid Na^+ outflow in the depolarization.

24. Which is the false statement regarding the human skin.
(1) Epidermis consists of stratified keratinized squamous epithelium.
(2) Blood vessels in the dermis supply oxygen and nutrition to the deep layers of epidermis.
(3) In areas where the skin is subjected to wear and tear, the epidermis is thicker.
(4) Dermis also contributes to maintain the skin colour.
(5) Collagen fibers bind water and give the skin its tensile strength.

25. Which is the correct response regarding the Birth control methods.
(1) Condoms for males - Stimulate the break down of sperms.
(2) IUD (loop) - prevent fertilization.
(3) Depo - Provera injection - Periodic injection of synthetic estrogen.
(4) Oral contraceptives - Prevent implantation.
(5) Vasectomy - Prevent synthesis of sperms.

26. Which of the following statements regarding assisted reproductive technology is incorrect?
(1) In vitro fertilization is a series of procedures used to treat infertility problems.
(2) Oocyte and the sperm to achieve the fertilization under laboratory conditions.
(3) The fertilized eggs are incubated until reach at least 16 cells.
(4) Conventional IVF needs between 50 and 1000 thousands of sperm from the male per one Oocyte in order to achieve the fertilization.
(5) Intra - cytoplasmic sperm injection (ICSI) needs only one sperm per Oocyte.

27. Select the correct statement regarding the ribs.
(1) Ribs only form the lateral walls of the thoracic cage.
(2) All ribs are articulate thoracic vertebrae and sternum.
(3) Head of the rib articulates with vertebral bodies, facets of tubercle articulate with transverse process of vertebrae.
(4) All true ribs are articulated with body of sternum.
(5) 35 bones are used to form rib cage.

28. G and N are two dominant alleles for particular character in a plant and g and n are recessive alleles. These alleles are assort independently. Following genotypes are resulted in a particular cross.
ggnn , ggNn , GgNn , Ggnn.
According to the above results which of the following statement is ~~correct~~ incorrect?
(1) One parent heterozygous for both allele pairs.
(2) Test cross is performed.
(3) Above cross can be used to explain Mendel's second law.
(4) G and N alleles are present some distance on the same chromosome.
(5) Both parents are produced 4 gametes.

29. Select the incorrect statement of the following.
(1) Primer present at the beginning of the each okazaki fragment.
(2) Nucleosome contains 146 base pairs.
(3) DNA replication is important both mitosis and meiosis cell division.
(4) Synthesizing of new DNA strand occurs 5^1 to 3^1 direction.
(5) Chromatin strand contains DNA, histone protein and other types of proteins.

30. Select the correct combination.

(a)	Identified gene locus	- T.H. Morgan
(b)	X - ray crystallography of DNA molecule	- James watson
(c)	DNA double helix model	- Rosalind Franklin
(d)	Totipotent	- Mattias Schleiden
(e)	All new cells are arised from pre existing cells.	- Rudolf Virchow

31. Incorrect statement regarding polyploidy
(1) Polyploid organisms are always non-fertile.
(2) Polyploidy can be induced using Colchicine.
(3) Among amphibian polyploid condition may be present.
(4) Polyploidy individuals are more normal than heterozygosity individuals.
(5) Polyploid plants have lower growth rates than related diploids.

32. Select the correct statement.
(1) DNA can insert into any eukaryotic cell using *Agrobacterium*.
(2) In transduction large number of recombined vector is mixed with host cells.
(3) Purpose of cloning vector is increase number of copies in a single host.
(4) When use of gene gun small particles of silicon are coated with copies of the DNA.
(5) Yeast artificial chromosomes (Yeast cloning vectors) carry autonomously replicating sequences, sequences of Centromeres and Ori.

33. Correct statement regarding mutation is,
(1) Non-Sense mutation is important to protect from malaria.
(2) Colour blindness occurs due to mutation on the chromosome 7.
(3) A segment from one chromosome is transferred to its homologous chromosome is called translocation.
(4) Always when insertion or deletion it leads to frame shift mutation.
(5) A segment from one chromosome break, then changed it orientation and can be fuse to the same chromosome.

34. In an ecosystem ,
(1) Energy flow in cyclic manner.
(2) Secondary or tertiary consumers are only carnivores.
(3) Minerals flow in cyclic manner.
(4) Niche includes only habitat of an organism.
(5) Carnivores and hebivores are included in to secondary consumers.

35. Which of the following statements regarding tropical forests is incorrect?
(1) Both tropical rain forests and tropical dry forests are included in to this biome.
(2) Stratification is observed in tropical rain forests.
(3) Only exergreen plants are present.
(4) Consitute the higher diversity of plants and animals out of all biomes.
(5) Under the sub canopy layer there is a understory which consists of shrubs and large herbaceous plants.

36. Which of the following not a characteristics of pathogenic micro organisms?
(1) Having capsule to protect against host's defense mechanisms.
(2) Produce endotoxins and exotoxins.
(3) Having enzymes for invasiveness.
(4) Ability to enter directly in to host blood by disrupting host tissues.
(5) Having enzymes such as DNAase to alter the host's metabolic process.

37. Which of the following response correctly indicates antibiotics and their functions?

	Antibiotic	**Function**
1.	Rifampin	Disrupting plasma membrane.
2.	Erythromycin	Inhibition of DNA / RNA synthesis.
3.	Tetracycline	Inhibition of protein synthesis.
4.	Penicillin	Disrupting cell membrane.
5.	Daptomycin	Inhibition of cell wall synthesis.

38. Which of the following statements is correct regarding solid waste management?
(1) Paper is easily degraded since micro organism effectively attack papers when the waste is placed in to large compacted dumping sites.
(2) A land fill located in areas with high ground water levels.
(3) Anaerobic condition in the pile of compost, promote the activity of methanogenic bacteria.
(4) In a sanitary land fill waste collect in the pile, usually on marginal or sub marginal land.
(5) Sanitary land filling is not a main method of municipal solid waste is disposed.

39. Select the correct statement regarding the dengue vector?
(1) Breeds in polluted waste bodies.
(2) Adult female mosquitoes have white markings on it's body.
(3) Female mosquito lay eggs in the form of egg rafts that floats on the surface of water.
(4) After hatching larva rests keeping it's body with an angle to the water surface.
(5) Posterior margin of the wings is fringed with bristle and scales.

40. Not an important of tissue culture technique.
(1) Production of pathogen free plants.
(2) Ability to produce plants in large number in small space.
(3) Ability to produce plants with variations.
(4) Ability to produce plants which do not produce viable seeds.
(5) Ability to produce plants throught the year.

For each of the questions 41 to 50 one or more of the responses is/are correct. Decide which response/ responses is/are correct and then select the correct number.

If only, **A, B** and **D** are correct..... 1
If only **A, C** and **D** are correct..... 2
If only **A** and **B** are correct..... 3
If only **C** and **D** are correct..... 4
If any other response or combination of responses is correct..... 5

Directions summarised				
1	2	3	4	5
A,B,D correct	**A,C,D** correct	**A,B** correct	**C,D** correct	Any other response or combination of responses correct

41. Which of the following statement / statements regarding extracellular matrix is / are correct?
(A) Influences the cell behavior by involving in the mechanical and chemical signaling.
(B) Carbohydrates containing molecules are the most abundant component.
(C) Most abundant glycoprotein is collagen which forms fibres inside the cell.
(D) Collagen fibres are inter connected by proteoglycan.
(E) Contain all cells except cells, lack cell walls.

42. Which of the following feature / features can be used to identify animals belongs to nematoda and annelida.
(A) Cylindrical body.
(B) Segmentation.
(C) External appendages.
(D) Cephalization.
(E) Presence of digestive system.

43. Select the correct statement / statements regarding secondary growth.
(A) Secondary growth occurs due to activity of vascular combium and cork cambium.
(B) All initials of vascular cambium oriented perpendicular to the axis of the stem or root.
(C) Cork cambium and tissues it produces are collectively called periderm.
(D) In typical woody root, the vascular cambium forms laterally exterior to the primary xylem and interior to the primary phloem and pericycle.
(E) As the cork cell mature, they deposit lignin in their walls and they become dead cells.

44. Which of the following statement / statements is / are correct regarding human ear?
(A) Outer ear consists numerous modified sweat glands.
(B) Middle ear is an air filled cavity within the temporal bone and it is lined by simple epithelium.
(C) Round window is covered by a small bone called stapes.
(D) Tympanic canal ends at the round window.
(E) Hairs of the cochlear hair cells project outwards the cochlear duct.

45. A feature seen in gonorrhea is ,
(A) Painless ulcers.
(B) Painful ulcers.
(C) Yellow discharge with pus from genito - urinary tract.
(D) Form lymphoma condition.
(E) Loss of appetite and weight.

46. Which of the following statement / statements regarding feature to identify following vertebra is/ are incorrect?

(A)	Atlas Vertebra	The spinous process is bifid.
(B)	Axis Vertebra	Facet for articulation with occipital condyle.
(C)	Thoracic Vertebra.	Facets for articulation with ribs.
(D)	lumbar Vertebra	Size of the body is larger.
(E)	Cervical Vertebra	Transverse processes have foramen for Vertebral artery.

47. Select ~~correct~~ incorrect statement / statements

(A) In breeding is used to produce pure breading generation.
(B) Outbreeding allows the desirable characters of the exotic parent, which the indigenous parent does not have, to be transmitted to the progeny.
(C) The progeny obtained from inter specific breeding partially fertile.
(D) Out crossing perform between two species.
(E) Inducing advantage mutations in plants, occurs in mutation breeding.

48. Which of the following statement / statements regarding global warming and climatic change is /are correct?

(A) Green house gases CO_2 and CH_4 have higher potential for global warming.
(B) CO_2 gas has ability to absorb heat than black carbon.
(C) Melting glaciers and extremes of rains are several effect of global warming.
(D) phytoplankton absorb more CO_2 than forests that contributes to reduce global warming.
(E) Depletion of the ozone layer not an effect to the global warming.

49. Similarity / Similarities between mycoplasma and phytoplasma.

(A) Prokaryotes.
(B) Invisible under light microscope.
(C) Reproduction by budding and binary fission.
(D) Parasites of animals.
(E) They are aerobic.

50. Which of the following statement / statements regarding rhizosphere is / are correct?

(A) Symbiotic interaction zone between plant roots and micro organisms.
(B) Bacteria are the most numerous organisms in the zhizosphere.
(C) Pathogenic micro organisms are absent in zhizosphere.
(D) Symbiotic fungi associate with the rhizosphere.
(E) Micro organisms in the rhizosphere not feed on the root.

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ANANDA COLLEGE - COLOMBO 10

09 | E | II

Final Term Test - 2022 January
G.C.E. (Adv. Level) Examination - 2021 August

Biology II **Grade 13** Time : **3 Hours**

Name :- ..... Index No. :- ..... Class .....

Instructions:

* *Use of calculator is not allowed.*

PART A:- Structured Essay (page 2-11)

* *Answer **all** questions in this paper itself.*
* *Write your answers in the space provided for each question. Please note that the space provided is suffiicient for the answer and the extensive answers are not expected.*

PART B - Essay (page 12)

* *Answer **only 04** questions.*
* *At the end of the time allotted for this paper, tie the answers to four **Parts A** and **B**, together, so that **Part A** is on top and hand them over to the Supervisor.*
* *You are permitted to remove only **Part B** of the question paper from the Examination Hall.*

Only for the Examiner's Use :

Part	Question No.	Marks
A	1	
	2	
	3	
	4	
B	5	
	6	
	7	
	8	
	9	
	10	
Total		
Percentage		

Marks

Paper I	
Paper II	
Total	
Percentage	

Final Mark	

PART A - Structured Essay

01. (A) i) (a) Name two macro molecules in the plasma membrane.

.....

(b) Name a protein with a structure that has formed due to the inter molecular hydrogen bonds of the polypeptide chain.

.....

(c) Name the type of polysaccharide in following structures and their monomers.

	Polysaccharide	**Monomer**
Middle lamella	.....	.....
Exo skeleton of Arthropodes	.....	.....

ii) What is the main difference between the scanning electron microscope and the transmission electron microscope?

.....

iii) Cytoskeleton is known as a dynamic structure. why?

.....

iv) (a) What is the functional difference between the kinetochore protein and the cohesion protein which are important in the cell division.

.....

(b) Mention the main reason for galls in plants and the similarity between the galls and tumors.

Reason - .....

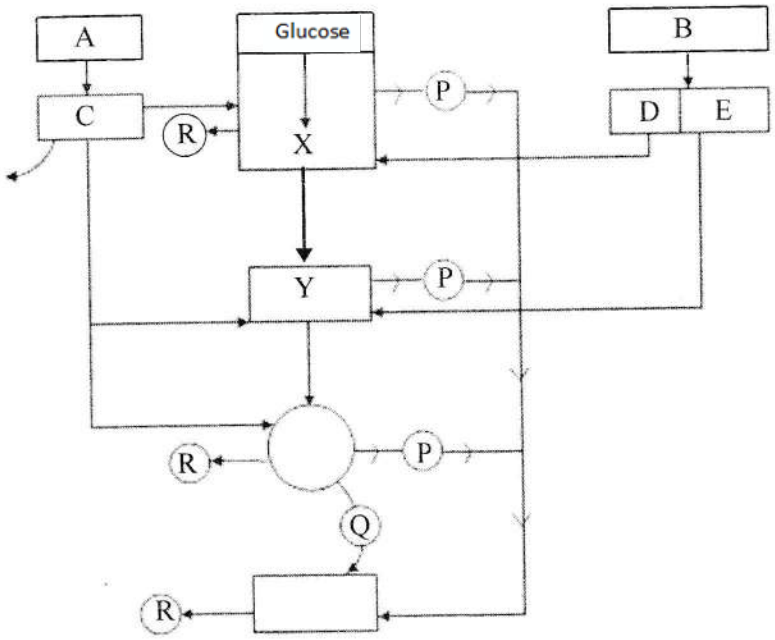
Similarity - .....

v) Mention two metabolic process that convert ATP energy into another energy form and can be seen only within several species of organisms.

.....

.....

(B) Following diagram shows the oxidation of various organic substrates. Answer the question (i) and (ii) based on it



(i) Name the B, C, D, E compounds mentioned in the diagram.

B - .....

C - .....

D - .....

E - .....

(ii) What are the P, Q, R compounds in the diagram ?

P - .....

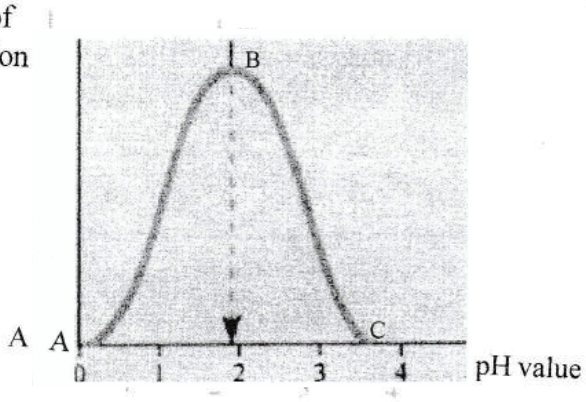
Q - .....

R - .....

(iii) State two anaerobic respiratory methods in organisms and the final electron acceptor of each.

Anaerobic respiration	Final electron acceptor
.....	.....
.....	.....

(iv) Following graph shows the rate of reaction of an enzyme at various pH values.



(a) Briefly give the reason for the B - C difference in the graph.

.....

(b) Give an example enzyme that shows a similar behaviour as the above graph.

.....

(v) Name a molecule act as an allosteric inhibitor and involves in feedback inhibition.

.....

(C) (i) Mention two features evolved other than the vascular tissues, during the evolution of vascular from non vascular plants.

.....

.....

(ii) Name a phylum of fungi which shows the following characteristics.

(a) Exogenous sexual spores .....

(b) Endogenous sexual spores .....

(c) Exogenous asexual spores .....

(iii) Complete the following dichotomous key.

hook worm, leech, star fish, Beetle, rat snake, frog

1). Show radial semmetry .....

Do not show radial semmetry .....

2). Have legs .....

Haven't legs .....

3). Have a segmented body .....

Haven't a segmented body .....

4). Have feathers .....

Haven't feathers .....

5). Have scales .....

Haven't scales .....

02. (i) Name two structural features of inter calary meristematic cells.

.....

.....

(ii) What is the role of Abisasic acid (ABA) synthesised as a result of drought stress.

.....

.....

.....

.....

(iii) Briefly explain the principle of the experiment finding the solute potential of *Rhoeo* leaf cells.

.....

.....

.....

(iv) At which state we can seperately identify the sporophyte of *Pogonatum* from its gametophyte using the naked eye.

.....

(v) What is meant by heterosporous.

.....

.....

(vi) What is photomorphogenesis.

.....

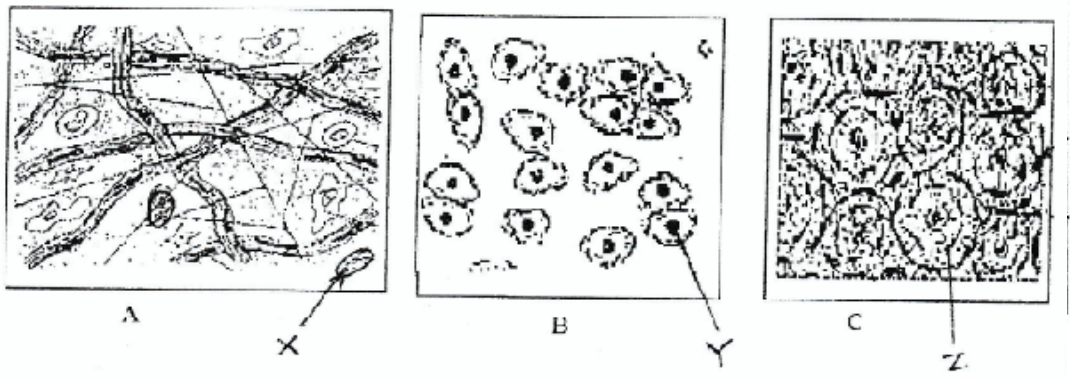
.....

(vii) Write two responses controlled by phytochrome photo receptors.

.....

.....

(B)



Above diagram shows several types of connective tissues.

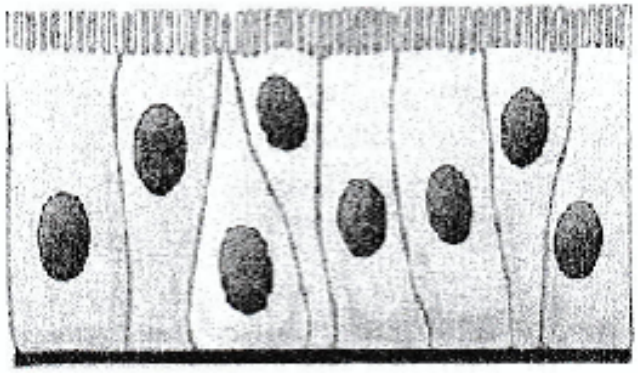
(i) Identify A, B, C and Write the function of X, Y, Z cells labelled within them.

	Type of cell	**function**
X	.....	.....
Y	.....	.....
Z	.....	.....

(ii) Write a common function of both epethelial tissues and connective tissues.

.....

(iii) Write **two** special features other than the presence of cilia to identify the following epithelial tissue.



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.....

(iv) What are the mechanisms used by the filter feeders to strain suspended food particles from the surrounding watery medium.

.....

.....

(v) What is "mucin" in saliva?

.....

(vi) Which enzyme convert smaller polypeptides into small peptides?

.....

(vii) Write a deficiency symptom of the vitamin, which is fat soluble and synthesized by the microbes in the small intestine.

.....

(viii) What are lymph nodes?

.....

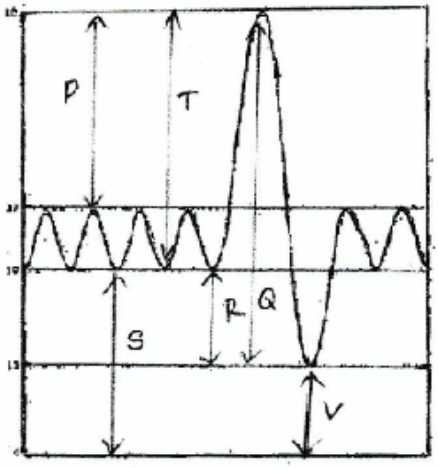
(ix) What is indicated by an ECG chart?

.....

(x) How can some substances like heparin prevent blood clots?

.....

(C) The diagram shows lung volumes and capacities.



(i) Name the lung volumes and capacities indicated by the letters P Q R S T U.

P ..... S .....

Q ..... T .....

R ..... U .....

(ii) Write the importance of S.

.....

(iii) What is the characteristic symptom of Asthma.

.....

(iv) Write a common disease to both silicosis and Asbastosis

.....

03. (A) i) What is the reason innate immunity known as non-specific defense?

.....

.....

ii) What is the protein that interfering with the viral replication of the innate immunity?

.....

iii) What are the complement protein?

.....

.....

iv) What is the function of above mention protein?

.....

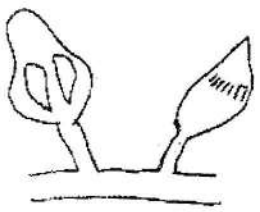
.....

v) What are antibodies ?

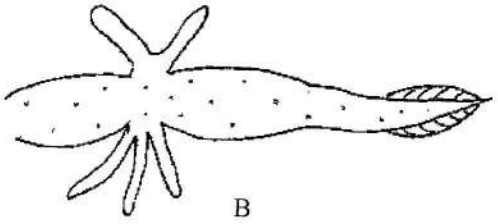
.....

.....

vi) Identify the following excretory structures and mention the animal phyla related to that.



A



B

Structure	Phylum
A	.....
B	.....

vii) What is mean by secretion when formation of urine ?

.....

viii) What is the necessity of secretion?

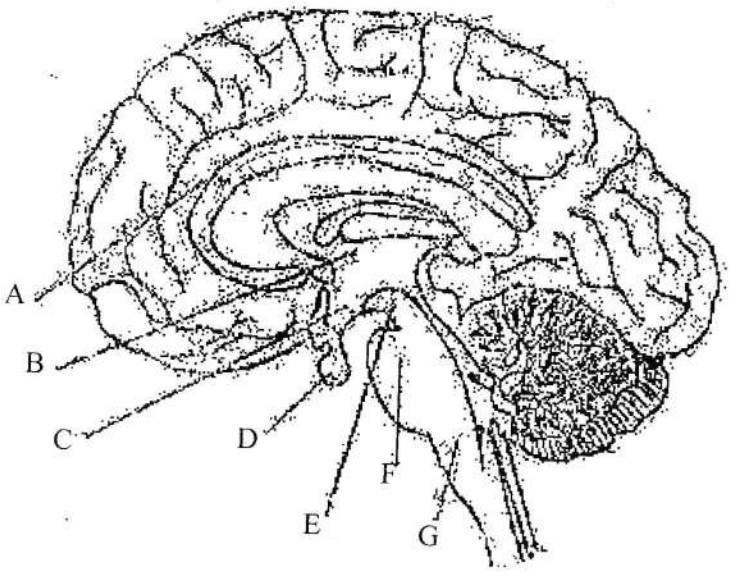
.....

(B) i) Name the phyla which contain brain, ventral nerve cord, and segmental ganglia.

.....

.....

ii) Following diagram shows longitudinal view of human brain. Mention the related letters which show following functions



1). Transfer information between peripheral nervous system and the mid brain & fore brain

.....

2). Relays and redistributes nerve impulses from most parts of the brain to cerebral cortex.

.....

3). Regulates appetite.

.....

iii) Mention the conduction of action potential in 4 steps.

.....

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.....

(iv) Mention the following disorders of the nervous system.

(a) Lose their ability to recognize people including their immediate.

.....

(b) They experience voices that only they can hear.

.....

v) Mention the part of the inner ear which perform the following functions.

(a) Provide information about the position of the head in space.

.....

(b) Perceive linear movements.

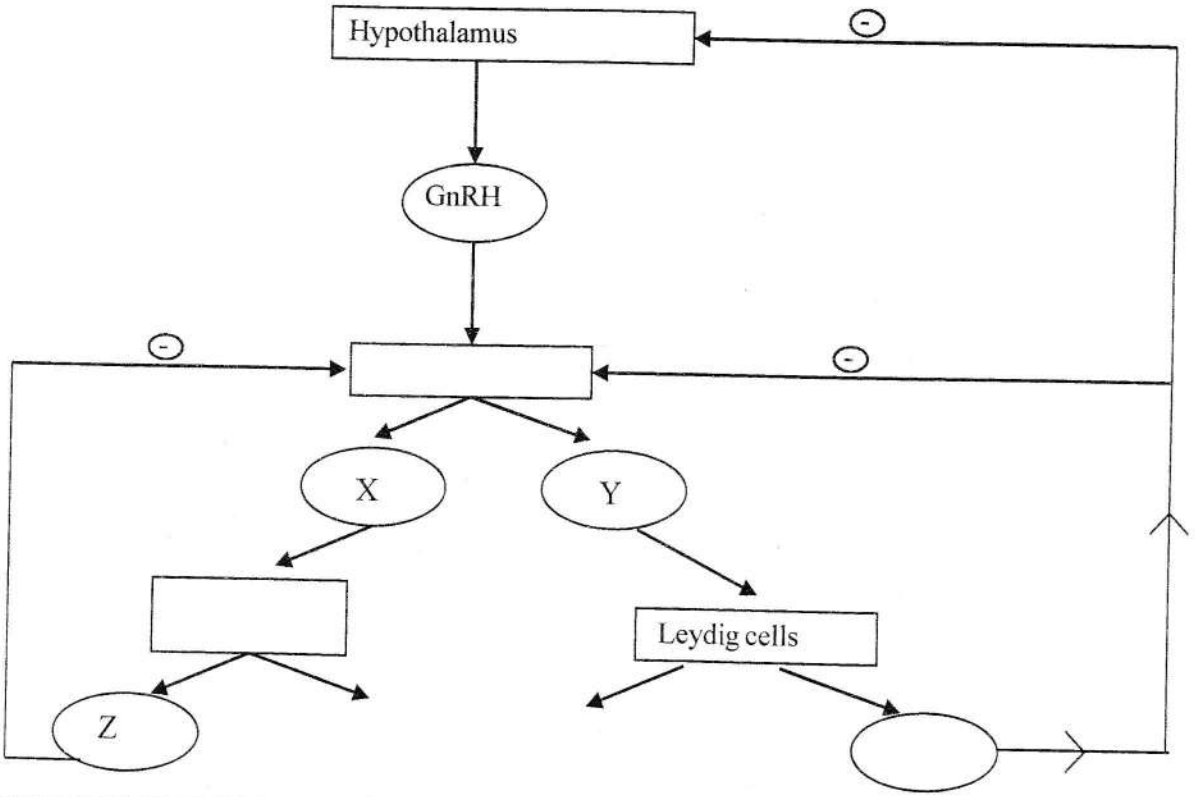
.....

(C) i) Write is asexual reproduction?

.....

.....

ii) Following question is based on diagram of hormonal control of the male reproductive system.



Mention the X, Y, Z hormons and their relevant functions.

	Hormon	Function
X	.....	.....
Y	.....	.....
Z	.....	.....

iii) Mention the birth control method which thicken cervical mucus in female.

.....

.....

iv) What is hydrostatic skeleton?

.....

v) Mention the animal phylum that bears endoskeleton with well developed coelom.

.....

vi) What is the animal phylum bears exoskeleton and endoskeleton?

.....

vii) Name the aquatic animal class move by undulating their body and tail up and down.

.....

.....

04. (A) i) a) Define who are microaerophilic micro organisms?

.....

b) Name the bacteria species shows feature mention in (i) (a) above.

.....

.....

ii) What is mean by toxigenecity of the pathogen.

.....

.....

iii) a) What type of immunization vaccines should require repeated booster (secondary) doses?

.....

b) Name two diseases which gain immunization mention in (iii) (a) above.

.....

.....

iv) Mention what are bio - fertilizers?

.....

.....

v) (a) What is a biome?

.....

.....

(b) Mention 3 adaptations shown by tropical montane forests in Sri Lanka.

.....

.....

.....

.....

vi) What are endemic species?

.....

.....

vii) What is the protocol on substances that deplete the ozone layer is an international treaty designed to protect the ozone by phasing out the production of numerous subtances that are responsible for ozone depletion.

.....

.....

viii) What are the main advantages of use polytunnels for crops ?

.....

.....

.....

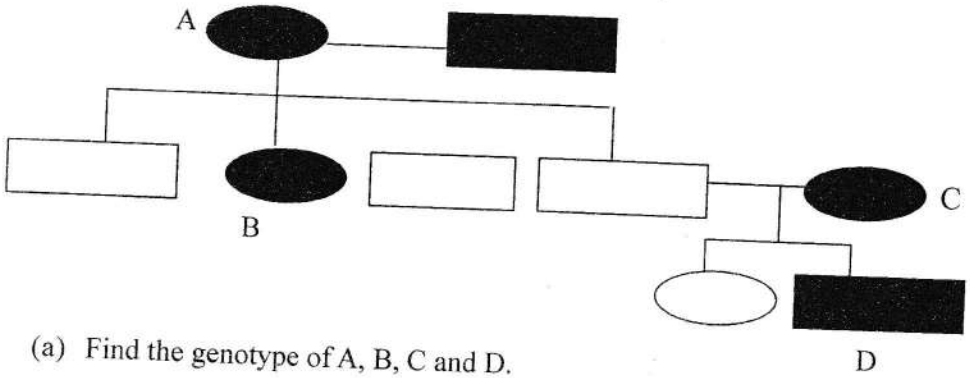
ix) Name a bacteria species can be used to control the dengue vectors?

.....

x) What is nanotechnology?

.....

(B) Following pedigree analysis shows inheritance of widow's peak.



(i) (a) Find the genotype of A, B, C and D.

A .....

B .....

C .....

D .....

(b) Find the probability of getting a boy without widow's peak when person D married with female without widow's peak.

.....

.....

.....

(ii) Allele for brown (B) eye colour of human dominant to allele for blue (b) eye colour. Find the frequency of b allele when 27000 B allele present in human population of 15000.

.....

.....

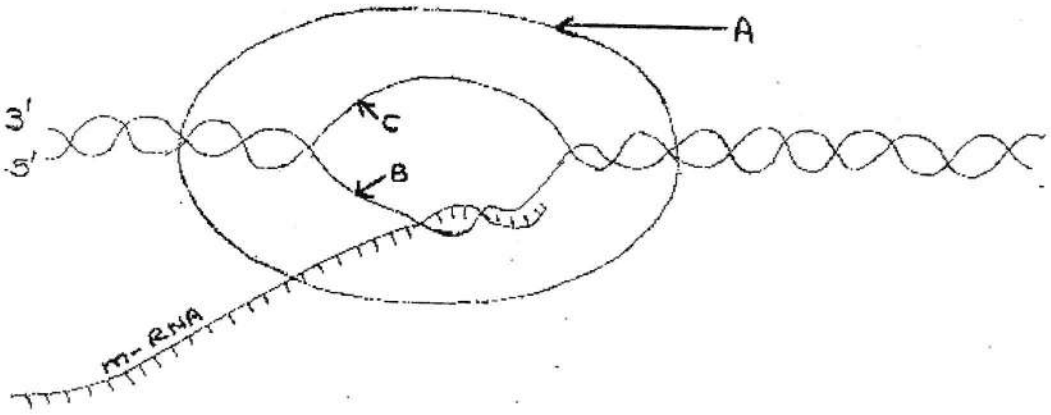
.....

(iii) Name the enzyme which perform following functions in DNA replication.

(a) Separate the DNA strands.....

(b) Proofreading activity of DNA .....

(iv) Following question based on the given diagram.



(a) What is the process mention in above diagram?

.....

(b) Name the A , B and C in the above diagram.

A .....

B .....

C .....

(v) Using arrow head mention the unwinding direction of the DNA strands.

(vi) Name the steps which GTP energy gain for ~~replication~~ translation.

.....

.....

(c) (i) What is introns?

.....

.....

.....

(ii) What is the advantages of use yeast artificial chromosomes vectors?

.....

.....

.....

(iii) What is DNA sequencing?

.....

.....

.....

(iv) What is the important of C-DNA library?

.....

.....

(v) Write two advantages when used small tandem repeats to form genetic profile.

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◈◈◈

Final Term Test - 2022 January
G.C.E. (Adv. Level) Examination - 2021 August

Biology II **Grade 13**

Part B - Essay

* **Answer 04 questions only.**

05. (a) Briefly describe that light dependent reaction of photosynthesis.

(b) Photosynthesis efficiency of sugar cane is higher than paddy. Explain the reasons.

06. (a) Briefly explain the water potential concept.

(b) Explain the mechanism of soil solution enter into xylem of the root.

07. (a) Describe the structure of the nephron.

(b) Explain the role of human kidney in osmoregulation.

08. (a) Explain the preparation of culture media to grow fungi, using basic laboratory techniques.

(b) Describe the role of micro - organisms in the nitrogen cycle.

09. (a) What is mutation?

(b) Explain the types of gene mutation occur in human with examples.

10. Write short notes on the following,

(a) Antimicrobial protein.

(b) Epistatis.

(c) Acid rain.

◈◈◈