Final Term Test - September 2020
Biology I
Grade 13

Time : 2 hours

Enu

- Answer all questions.
- In each of the questions 1 to 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 in accordance with the instructions given on the back of the answer sheet.

1) Which of the following is an unbranched linear form of structural polysaccharide found in organisms?
1) Starch 2) Glycogen 3) Cellulose 4) Inuline 5) Hemicellulose

2) Which is not a function of membrane proteins?
1) Transport
2) Intercellular connection
3) Enzymatic activity
4) storage of energy
5) cell recognition

3) Following are some processes take place in photosynthesis.
A) Reduction of $NADP^+$
B) Splitting of water in light reaction.
C) Fixation of light by pigment molecules.
D) Reduction of 3PGA
E) CO_2 fixation in Calvin cycle.
Of which processes, enzymes are involved,
1) A, B, E 2) C, D, E 3) B, C 4) C, D 5) A, C

4) Select the correct statement regarding the reactions of cellular respiration.
1) All the ATP molecules produce in the aerobic respiration are produce in mitochondria.
2) Production of CO_2 in aerobic respiration occurs in mitochondria.
3) During respiration NADH act as an electron acceptor and NAD^+ act as electron donor.
4) Usable energy in $FADH_2$ is higher than the energy in NADH.
5) When fat is used as a respiratory substrate, volume of O_2 consumed is equal to the volume of CO_2 evolved.

5) Some characters of few phyla in kingdom Animalia are given below.
A - Triploblastic, Acoelomate body
B - True coelom appeared for the first time.
C - Body wall is composed only of longitudinal muscles.
D - No cephalization but have endoskeleton.

Select the response having correct order of animal phyla with above features.
1) Annelida, Platyhelminthes, Mollusca, Echinodermata
2) Nematoda, Platyhelminthes, Annelida, Mollusca
3) Platyhelminthes, Nematoda, Annelida, Echinodermata
4) Platyhelminthes, Mollusca, Annelida, Nematoda
5) Platyhelminthes, Annelida, Nematoda, Echinodermata

6) Which of the following features can be seen in both parenchyma and collenchyma cells?

a) Unevenly thickened cell walls
b) flexible cell walls
c) Living cells
d) Large central vacuoles.
e) Thin primary cell walls.

1) a, b, c 2) b, c, d 3) c, d 4) a, b, c 5) c, d, e

7) A similar feature between vascular bundles in stem of dicot and stem of monocot plants.

1) Arrange as a ring.
2) Cambial tissue presents in between xylem and phloem.
3) Colateral vascular bundles.
4) Sclerenchyma capsule around vascular bundle.
5) Radial vascular bundles.

8) Elements responsible for chlorosis of older leaves in plants are,

1) Fe, Cl 2) S, Ni 3) Zn, B 4) Mo, Ni 5) Mn, B

9) Some characteristics of plants of kingdom Plantae are given below.

A) Photosynthetic
B) Independent
C) Presence of a single sporangium
D) Microscopic
E) Production of haploid homospores

Select the group of correct statements regarding *Pogonatum* sporophyte,

1) A, B, C 2) C, D, E 3) B, D, E 4) A, C, E 5) B, D

10) Select the correct statement regarding Fungi.

1) All fungi act as decomposes.
2) Both ascospores and Basidiospores are endogenous.
3) Coenocytic fungi filaments are septate.
4) Fungi Chytridiomycota produce both flagellated zoospores and flagellated gametes.
5) All fungi are ingestive heterotrophs.

11) Correct statement regarding seed plants,

1) Only in some seed plants keep the megasporangium within the sporophyte.
2) No need of liquid medium for fertilization is a unique feature of seed plants.
3) Presence of dispersal methods found only in seed plants.
4) Male gametophyte is covered by wall of the pollen grain.
5) Pollen tube is important for both nutrition and transportation.

12) Select the incorrect statement regarding human nephron.

1) Its cavity is lined by a simple epithelium.
2) Major part of it located in the renal medulla
3) Involve in regulating blood pressure.
4) Two capillary networks are associated with it.
5) Majority of nephrons in the kidney are cortical nephrons

13) Which of the following structure of man produce steroid hormones?
1) Adrenal medulla
2) Thyroid gland
3) Thymus gland
4) Corpus luteum
5) Hypothalamus

14) A feature that can be seen in the human circulatory system is,
1) All arteries and veins are paired.
2) Always oxygenated blood is pumped by the heart in systemic circulation.
3) Heart is myogenic therefore lack nerve supply.
4) Lymph is collected from peripheral capillaries.
5) Blood in all veins of the body collected to the right atrium.

15) Select the correct response regarding the type of white blood cell and function.

1) Neutrophils	-	Secretion of Histamine
2) Monocytes	-	Produce variety of macrophage.
3) Basophils	-	Produce anti allergies
4) Lymphocytes	-	Release anticoagulants
5) Eosinophils	-	Produce antibodies.

16) Select the incorrect statement regarding interferons.
1) Secreted by natural killer cells.
2) It stimulates the secretion of antiviral proteins.
3) Activate phagocytosis of macrophages
4) Inhibit the replication of virus.
5) It is a type of protein present in blood.

17) Select the correct pathway of transportation of chylomicron, absorbed by lacteal of small intestine, up to the liver.
1) Hepatic portal vein → Liver
2) Right Lymphatic duct → right subclavian vein → superior vena cava → heart → Hepatic artery
3) Thoracic duct → Left subclavian vein → Superior vena cava → heart → Aorta → Hepatic artery
4) Thoracic duct → right subclavian vein → Inferior vena cava → heart → Liver
5) Right Lymphatic duct → heart → Aorta → Liver

18) The correct order of the parts of human brain responsible for, body movements such as running and climbing, fight and flight response and reasoning,
1) Pons varolii, Medulla oblongata, cerebrum
2) Pons varolii, Hypothalamus, Thalamus
3) Medulla oblongata, Hypothalamus, cerebrum
4) Mid brain, Medulla oblongata, cerebrum
5) Thalamus, Medulla oblongata, cerebellum

19) Select the correct statement regarding thermoreceptors of man.

1) More number is present in epidermis..
2) Hypothalamus lacks thermoreceptors though it involves in regulation of body temperature.
3) Krause end bulbs detect high temperature.
4) Some thermoreceptors are specialized neurons.
5) Thermoreceptors in medulla oblongata detect temperature of blood.

20) Select the response which does not mention the stimuli relevant for secretion of following hormones.

1) ADH	–	rise of blood osmotic pressure
2) Insulin	–	Drop of blood glucose level
3) Aldosterone	–	Drop of blood volume and pressure.
4) Parathormone	–	Drop of blood calcium level
5) Thyroxin	–	Presence of TSH in blood.

21) A similarity between spermatogenesis and oogenesis in man is,

1) Completion of both processes occur inside the gonads.
2) Number of gametes produced by one mother cell.
3) Size of cells produced.
4) Number of chromosomes produced in cells.
5) Being a continuous process.

22) The correct statement regarding human reproductive cycle,

1) Uterine cycle is regulated by ovarian hormone.
2) Proliferative stage of ovarian cycle is compatible with the secretory stage of the uterine cycle.
3) All stages of uterine cycle are regulated by progesterone.
4) Secretory phase begins with the degeneration of corpus luteum.
5) Proliferation phase induces with the implantation of embryo,

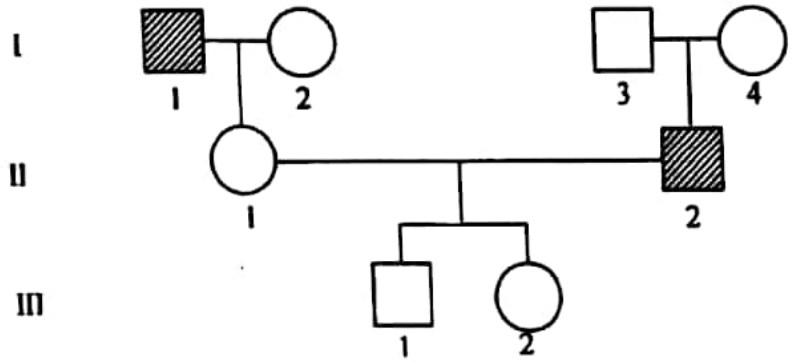
23) Which of the following is acceptable regarding human lactation?

1) It doesn't happen during the gestation period due to the high concentration of PIH in mother's blood.
2) Positive feedback of Oestrogen and progesterone in maternal blood at the parturition, cause initiation of lactation.
3) Ejection of milk is regulated by oxytocin.
4) This is regulated only by hormone.
5) Milk secreted by a mother, has constant composition.

24) Select the correct statement regarding human vertebral column?

1) Curves are absent in the vertebral column in an infant at birth.
2) The identifiable common feature of the cervical vertebrae is bifid spinous process.
3) Spinous processes bend towards downward is visible when descending along the vertebral column.
4) consist of 26 bones.
5) Axis articulates with the skull.

25) The below pedigree chart shows the inheritance of Haemophelia in three generations. All Haemophelic individuals are coloured. The allele "H" is healthy and "h" is the Heamophelic allele.



In the above pedigree chart, the genotypes of individuals III – 1 and III – 2 are respectively,

1) X^HY , X^HX^H 2) X^HY , X^HX^h 3) X^HY , X^hX^h 4) X^HY , X^HX^h 5) X^hY , X^HX^H

26) Select the correct statement regarding sex linked inheritance.

1) Sex linked disorders cannot be seen in females.
2) Linked gens are absent on Y chromosome.
3) Sex linked disorders are expressed in males in homozygous recessive condition.
4) All sons of Haemophilic father have Haemophilia.
5) Probability of transmission Heamophelic gene of a father to his daughters is 100%

27) Which of the following statement is correct regarding activity of genes in organisms?

1) Specific phenotype is controlled by a single gene.
2) All genes of a prokaryotes are located on a single chromosome.
3) Operone code for a single peptide.
4) During the formation of a mature mRNA strand by transcription of a gene, exones are removed.
5) More area of the eukaryotic DNA is functional.

28) Components of the initiation complex of translation step of protein synthesis are,

1) Ribosomes and mRNA
2) m RNA and tRNA
3) DNA, Ribosomes and mRNA
4) Ribosomes, mRNA and tRNA
5) tRNA and Ribosomes

29) Select the correct match regarding chemicals used in gene technology and their role.

1) Riverse transcriptase	-	formation of mRNA from DNA
2) Chelating agents	-	Inhibition of enzyme activity of DNAase
3) SDS/ Phenol	-	Release of DNA from RNA.
4) Ethanol	-	buffering
5) Ethidium bromide	-	Isolation of DNA

30) Which of the following chromosome combination is correct regarding a male with downs syndrome?

1) 45 Autosomes with XY
2) 44 Autosomes with XY
3) 46 Autosomes with XY
4) 44 Autosomes with XXY
5) 45 Autosomes with XO

31) Which of the following is true regarding Biome Tundra?
1) It covers 10% of earths land surface.
2) Soil is moist.
3) During the winter, temperature does not falls below – 30°C.
4) Alpine tundra receives annual precipitation less than 600 mm.
5) The permafrost layer of the soil favors the growth of plant roots.

32) Following are the Information of three organisms.
Species A – Found only in few zoological gardens in the world.
Species B – Lives in oceans and widely used in fishery industry.
Species C – Lives in oceans while their breeding sites are frequently destroyed by man.

The ascending order of risk of extinction of above three species is,
1) A C B 2) B C A 3) B A C 4) C B A 5) A B C

33) Which of the following is a true mangrove species?
1) *Acrostichum aureus* 2) *Acanthus ilicifolius* 3) *Avicennia marina*
4) *Halophyla* 5) *Spinifex*

34) Which of the following statement is correct regarding microorganisms?
1) Enveloped viruses are roughly spherical and are not surrounded by a capsid.
2) Prions are infectious particles without nucleic acids smaller than viruses.
3) All fungi are saprotrophs and absorptive heterotrophs.
4) Peptidoglycan is the cell wall component of mycoplasma.
5) Viroids consist of RNA core with protein envelope.

35) Following are several generas of bacteria.
a) *Acetobacter* b) *Nitrobacter* c) *Clostridium*
d) *Rhizobium* e) *Thiobacillus*
Which of them are aerobic bacteria?
1) a, b and e 2) a, b and d 3) a and b
4) b, c and d 5) only a

36) Which of the following statement is not acceptable regarding trickling filter method of waste water treatment?
1) 75% - 95% of organic matter is removed by oxidation.
2) Mainly biological activity is used here.
3) The major objective of this is, lowering the BOD value.
4) Increase the rate of oxidation by vigorous aeration of waste water.
5) The water flowing through this system should be disinfected prior to release into natural waters.

37) Select the correct statement regarding pathogenic diseases of man spread by food.
1) Botulism is caused due to food intoxication.
2) Food borne diseases are not transmitted by viruses.
3) Cause for typhoid is an infection of protozoan.
4) Aflatoxin which cause for the food intoxication is produced by a bacterium.
5) Cholera is a food born disease caused by an endotoxin produced by *Vibrio cholera*.

38) Following are several international conventions / protocols. Which of them are established to minimize the impacts of air pollution?

A) Basal convention B) Marpol convention C) Montreal protocol
D) Kyoto protocol E) Ramsar convention

1) A, B 2) B, C 3) C, D 4) A, E 5) B, D

39) Which is the cause for Ich disease (white spot disease) commonly infected to fish in ornamental fish industry?

1) A fungus 2) A bacteria 3) A virus
4) A skin fluke 5) A unicellular external parasite

40) Select the correct statement regarding *Wuchereria bancrofti*

1) Adults live in human lungs.
2) Adult male and female show internal fertilization.
3) Infective stage to man is microfilaria larva.
4) Microfilaria larva are abundant in peripheral blood circulation in day time.
5) It is a unicellular organism belongs to phylum Nematoda.

- **The responses for questions 41 – 50 should be chosen as follows. One or more response could be correct.**

1	2	3	4	5
A, B and D correct	A, C and D correct	A and B correct	C and D correct	Any other response is correct.

41) Which of the following statement/s is/are correct regarding evolution of bio diversity

A - The first eukaryotic fossil is about 1.2 billion years old.
B - Appearance of 1st seed plants occurred during Mesozoic era.
C - Arthropods are the first group of animals to colonize the land.
D - Appearance, radiation and extinction of dinosaurs occurred in Mesozoic era.
E - The first tetrapod originated from Amphibians.

42) Correct statement regarding Domain bacteria.

A - Certain bacteria do aerobic respiration.
B - Cyanobacteria produce oxygen during photosynthesis.
C - All cyanobacteria fix atmospheric nitrogen.
D - Some cyanobacteria are symbionts.
E - All photosynthetic forms have chlorophyll a.

43) Plant phylum / phyla which include vascular plants showing homospory.

A. Pterophyta B. Lycophyta C. Bryophyta
D. Gnetophyta E. Anthocerophyta

44) Select the correct response regarding steps taken in following laboratory experiment and relevant reason for each.

A - Adding $NaHCO_3$ for identification of non – reducing sugars - - to neutralize the medium

B - Using *Tradescantia* epidermal peels to measure the solute potential of the tissue-- Easy to observe plasmolysis.

C - Using *Hydrilla* plants to set up the Audes apparatus– Rate of photosynthesis of them is high.

D - Using germinating seeds to set up the respirometer – Rate of respiration of them is high.

E - Adding Agar to prepare culture media -- To supply an energy source to the medium.

45) Component/s which stored in human liver is / are,

A - Vitamin K

B - Vitamin B

C - Vitamin B_{12}

D - Glycogen

E - Amino Acids

46) Which is/are the correct statement regarding sliding filament theory?

A - When muscle contracts, Z lines of the sarcomere get closer.

B - Actin filaments slide over Myosin filaments.

C - Sarcomere get shorter due to shortening of acting filaments.

D - When molecule of ATP attaches to the myosin head, cross bridges brake.

E - Binding sites of actin filament get exposed when Ca^{+2} present.

47) Select the correct statement regarding epigenetics.

A - Two types of expressions for the same DNA sequence.

B - Occurs only by gene interaction

C - Epigenetic inheritance may get reversed by various external stimuli from the environment.

D - Schizophrenia is a metal disorder caused due to genetic defects

E - Epigenetic traits do not inherit from parent to offspring.

48) Stop codons of genetic code are

A) UAG B) UAC C) UAA D) UGA E) UGC

49) Which of the following statement/s is/are correct regarding ecosystems in Sri Lanka?

A - Many natural reservoirs are situated in North central province.

B - Dry Patana are not found in wet zone.

C - Maximum numbers of Ramsar wetlands are located in the arid zone.

D - Savanna grasslands are found in dry zone as well as in intermediate zone.

E - Low lands wet forests cover the highest land surface of the country.

50) Which of the following vaccines contain live micro organisms?

A – Measles B – Chicken pox C – Polio D – Tetanus E – Cholera

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DEVI BALIKA VIDYALAYA – COLOMBO

09 E II

Final Term Test - September 2020
Biology II
Grade 13

Enu
Time : 3 hours

Name :- ..... Class : -..... Index no :- .....

Important :

- The question paper consists of **11** pages
- The question paper comprises **Part A** and **Part B.** The time allotted for both part in **3 hours.**

Part A - Structured Essay

(10 pages)

Answer all the questions on this paper itself. Write your answers in this spaces. This is sufficient for your answers and that extensive are not expected.

Part B - Essay

(01 page)

This part contains five questions. At the end of the time allotted for this paper, tie the two papers so that **Part A** is on top of **Part B** before handing them over to the Supervisor.

You are permitted to remove **only Part B** of the question paper from Examination hall.

For Examiner's use only
For the second paper

Part	Question Nos.	Marks
A	1	
	2	
	3	
	4	
B	5	
	6	
	7	
	8	
	9	
	10	
Total		

Final Marks

In numbers	
In words	

Part A – Structured Essay

★ Answer all the questions.

(1) A) i) Name the carbohydrate found in genetic material of organisms.

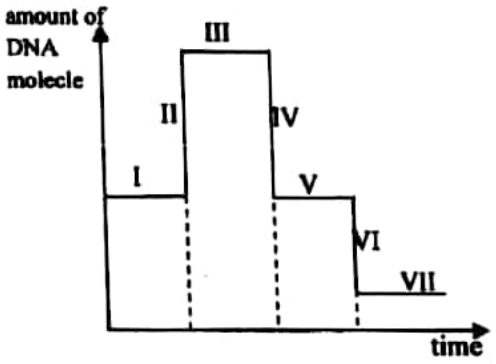
.....

ii) State one structural and one functional feature unique to DNA molecule.

structural feature .....

functional feature .....

iii) The below graph shows the amount of DNA molecules changes with the time in a eukaryotic cell.



a) State the numbers in the graph, relevant to interphase of a cell cycle ?

.....

b) Name stages of cell cycle relevant to I, II and III.

I. ..... II. .....

III. .....

c) Name stages of cell division relevant to V and VII in the diagram.

V. ..... VII. .....

d) State the number in the graph relevant to a gamete.

.....

e) What is the stage which cause variations among organisms of a species relevant to the above graph? .....

f) Complex of DNA & protein collectively known as chromatin. State the stage according to the graph, that those components are separated each other and name the process it occurs.

stage process

....

B) The table below is based on the components produced and gained by metabolism of carbohydrates and lipids in mammals.

respiratory substrate	energy produced kJg^{-1}	water produced gg^{-1}	amount of O_2 gained dm^3g^{-1}
carbohydrates	17.2	0.56	0.83
Lipids	38.9	1.07	2.02

i) State two importance of storing lipids over carbohydrates for mammals related with above table.

.....

.....

.....

ii) State another significance of lipids to mammals other than act as an energy source.

.....

iii) Why much more amount of O_2 is required when 1g of lipid is used as the substrate in cellular respiration than using 1g of carbohydrate?

.....

.....

iv) Answer following questions regarding maize (corn) leaf.

a) Initial CO_2 acceptor .....

b) Site of the initial CO_2 fixation .....

c) Site where the photophosphorylation occur.....

d) The 1st carbohydrate produced .....

e) Site where RuBISco is present. .....

C) i) In history of evolution, state two events took place as a result of photosynthesis process.

.....

.....

ii) Name major eras belong to Eon Proterozoic and state one animal group dominated in each era in history of evolution.

Era	dominated animal group
.....	.....
.....	.....
.....	.....

iii) State phylum / phyla which show the following characteristics in kingdom Plantae.

a) Differentiated plant body with 'stem', 'leaf' and rhizoids and lack vascular tissues .....

b) Show homospory and having strobili .....

c) Seed plants having male gametes with motile structures. .....

d) Developing sporophyte is not nourished by the gametophyte.....

iv) State two unique characteristic features of Phylum Bascidiomycota.

.....

.....

v) State a phylum in kingdom Animalia which show following characteristic feature in the first time during history of evolution.

a – Bilateral symmetrical body .....

b – Distinct cephalization .....

c – Complete alimentary canal .....

vi) Name a class of chordate which possess different types of respiratory structures.

.....

(2) A) i) State two specialized cells in the plant epidermis other than epidermal cells.

.....

ii) Name a supporting tissue which can be seen only in young dicot stems & leaves.

.....

iii) What are soft wood?

.....

.....

iv) State the method by which following components are transported within the plant body

a) water within vessels .....

b) mineral ions from root cortex into the xylem .....

c) O_2 & CO_2 across the plasma membrane .....

v) State the descending order of conduction resistance in water conduction paths of radial water transportation in plant root.

.....

.....

vi) State one significance of Casparian strips found in the root endodermis to the plant.

.....

.....

vii) Name a genera of aquatic plant which depend on insects for nitrogen

.....

B) i) What is meant by a food chain? .....

.....

.....

ii) Name trophic levels of a food chain which consists of 4 levels in correct sequence.

.....

.....

iii) Name trophic levels of following organisms.

a) Land snail .....

b) Diatoms .....

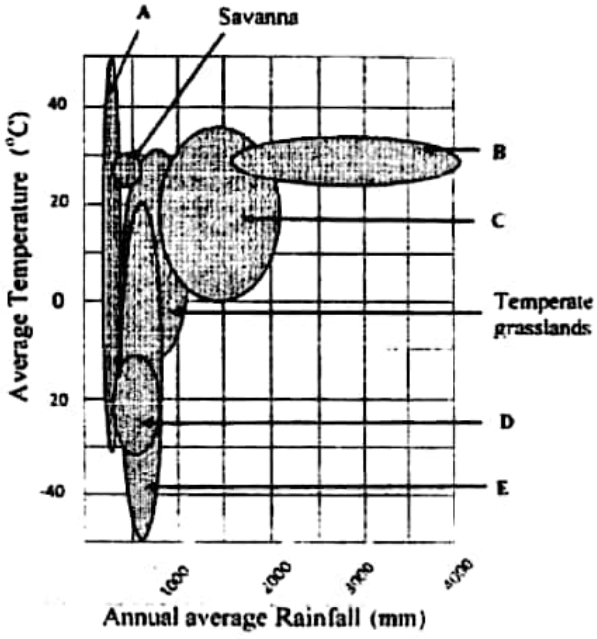
c) Leech .....

iv) What is a "Biome"? .....

.....

.....

v) Following diagram shows the biome distribution relevant to annual temperature and annual precipitation.



a) Name the biome E and state 2 characteristic features of its vegetation.

biome ..... characteristic features .....

.....

b) What is the letter relevant to the biome situated mostly northern region of the earth.

.....

c) Name the biome which has the highest diurnal temperature fluctuation and state the relevant letter in the graph.

Biome ..... Letter .....

C) i) a) What is mean by pleiotropy

.....

.....

b) Name a disease which show symptoms of pleiotropy.

.....

ii) When an organism having genotype YyBBRr is subjected to a self-cross, what is the probability of having organisms in same genotype?

.....

iii) a) What are "DNA" probes?.....

.....

.....

b) State available methods used to label probes?

.....

.....

iv) State two raw materials used in polymerase chain reaction (PCR) other than the DNA template

.....

v) What is the main objective of polymerase chain reaction (PCR)?

.....

.....

vi) State two methods used to deliver a part of desired DNA to host cells.

.....

.....

vii) State two significances of using "Small Tandem Repeats" (STR) in DNA finger printing.

.....

.....

viii) What is the major objective of the "Cartagena protocol" on Biosafety?

.....

.....

.....

3) A) i) Name enzymes secreted by small intestinal epithelium of man which completes protein digestion.

.....

.....

ii) State the reaction catalyzed by those enzymes?

.....

iii) Name two enzymes in saliva and state the function of each.

Enzymes	function
.....	.....
.....	.....

iv) What is the reason for "Gastritis"?

.....

.....

v) Name a phylum of each of the following respiratory pigment found in Kingdom animalia.

a) Haemocyanin .....

b) Haemoerythrin .....

vi) What are the primary lymphatic tissues in man?

.....

vii) How lymph is transported within the lymphatic system of man.

.....

.....

B) i) State two reasons by which glomerulus differ from other blood capillaries in human body.

.....

.....

ii) What is meant by the term "Secretion" in urine formation?

.....

.....

iii) State the site/s where secretion occurs in nephron.

.....

.....

.....

iv) Name three components added to glomerular filtrate during secretion.

.....

v) Why glucose is not included in the urine of a healthy person, though it is present in glomerular filtrate? .....

.....

.....

vi) Name an ion which is being absorbed and secreted in the nephron.

.....

C) i) Name the major parts of peripheral nervous system of man

.....

.....

.....

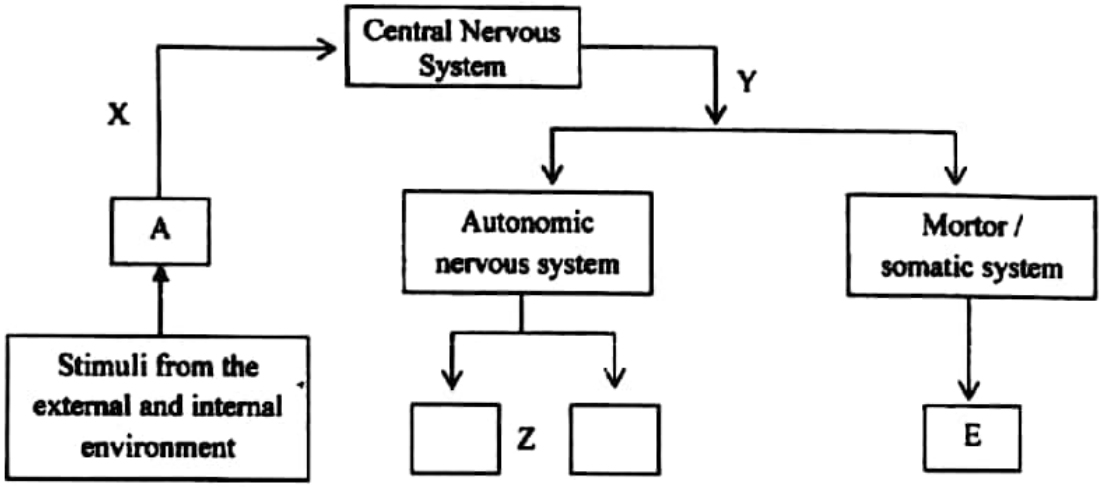
ii) What is the major function of peripheral nervous system?

.....

.....

.....

iii) The diagram below represents the organization of peripheral nervous system of vertebrates.



a) Nominate X and Y neurons.

X - ..... Y - .....

b) Name the type of A structures and state two characteristics features of them.

A structure – .....

.....

.....

c) What is the type of effector structure as E .....

d) Name the neurotransmitter which activates at the junction between Y neuron and E.

.....

e) What are the types of effectors belong to Z part?

.....

iv) Name the major regulatory center of autonomic nervous system.

.....

4) A) i) State two characteristics features of virus.

.....

.....

ii) Name correct sequence of major steps of lytic cycle of a bacteria phage.

.....

iii) State one instance of using each of the following sterilization method.

Sterilization		method
a) Incineration	-	.....
b) Ultra violet rays	-	.....

iv) State three advantages of using microbial processes over chemical processes in industry

.....

.....

.....

v) Name a microorganism used in each of the following productions.

a) Vitamin C .....

b) Citric acid .....

c) Enzyme Lipase .....

vi) State two events of using microorganisms in environmental management.

.....

.....

vii) Name two plant growth substances produced by rhizosphere bacteria in soil

.....

B) i) State three basic principles of food preservation.

.....

.....

.....

ii) Name two chemicals used in food preservation.

.....

.....

iii) State external factors influence on food spoilage.....

.....

.....

iv) Name a component used in disinfection of drinking water other than chlorine.

.....

v) In which stage that highest percentage of bacteria removed during drinking water purification.

.....

C) i) What is meant by post harvest loss?

.....

.....

ii) State two disadvantageous effects on harvest due to post harvest loss.

.....

.....

iii) a) What is the main concept behind the tissue culture?

.....

b) What is the most common benefit of tissue culture?

.....

iv) Name the currently available method to sterilize milk in and state conditions apply in the method.

method conditions

.....

.....

.....

v) a) What is the source of embryonic stem cells?

.....

b) State two advantages of using embryonic stem cells relatively to using adult stem cells in stem cell therapy.

.....

.....

vi) What is the most effective method of controlling the spreading pof Dengue and Filariasis?

.....

Part B – Essay

Answer four questions only.

5) a) What is meant by photosystem

b) Explain the role of photosystem during linear electron flows in photosynthesis.

6) a) Describe the effect of light on growth and development of plants.

b) State available responses in plants for biotic stresses.

7) a) Explain what is meant by the term "Adaptive immunity"

b) Describe the role of lymphocytes in Adaptive immunity responses.

8) a) Briefly describe contributory factors for Global warming and climatic changes.

b) Describe impacts of global warming and climatic change.

9) a) State specific characteristics of Mollicutes.

b) Briefly explain the methods available for controlling microbial diseases to man.

10) Write short notes on following.

a) Specific characteristics of kingdom Protista

b) Sarcomere

c) Cloning vectors.

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