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Third Term Test - Grade 13 - 2024

Index No. :

BIOLOGY - I

Time : 2 hours

• **Answer all questions.**

- (01) Which of the following is a level of both hierarchiel level of organisation of living thing and hierarchy of taxa.
- (1) Muscle fibers (2) Human heart
(3) Aquatic plants in a fresh water pond (4) Chloroplast
(5) Kingdom (.....)
- (02) Select the correct combination regarding bio - chemical compounds,
- (1) Phospholipid - Triacylglycerol
(2) Pepsin - biological catalyst in gastric juice
(3) Testosterone - quaternary proteins
(4) 3-phosphoglycerate- C_3 compound
(5) Inuline - stored sugar (.....)
- (03) Which of the following statement is incorrect regarding DNA,
- (1) Proteins are important in DNA packaging.
(2) Geneve information are stored as words consist of three letters.
(3) Type of RNA polymerase is involved in DNA replication.
(4) Double strand convert in to a single strand in $95^{\circ}C$.
(5) Always DNA replication occurs according to the genetic code given by DNA. (.....)
- (04) Select the correct statement regarding subcellular component which obtain by phagocytosis and contributes for food digestion
- (1) Produced by endoplasmic reticulum
(2) Transport residue materials out of cell by exocytosis.
(3) Contain oxidizing enzymes.
(4) Involve in photorespiration.
(5) Converts fatty acid in to sugar. (.....)
- (05) Select the incorrect response regarding meiosis,
- (1) Haploid four daughter cells are formed.
(2) New genetic variation occurs due to crossing over.
(3) Homologous chromosomes arrange randomly at metaphase plate is important for the independent assortment.
(4) It occurs in sexually reproducing species.
(5) No DNA replication occurs between meiosis I and meiosis II. (.....)

(01)



- (06) Select the correct statement regarding induced fit mechanism of enzymes,
- (1) It is a mechanism which regulate enzymic activity in a cell.
 - (2) Always active site of enzyme complimentary to the substrate.
 - (3) Interaction between substrate and active site may slightly change the shape of substrate.
 - (4) Tight fit of substrate molecules and active site, ensures the correct orientation of molecules.
 - (5) Enzymes are rigid structures. (.....)
- (07) Which of the following is correct statement regarding cellular respiration, photorespiration and photosynthesis of plants,
- (1) Take place in all plant cells.
 - (2) Decarboxylation take place in cellular respiration and photorespiration, carboxylation occurs in photosynthesis.
 - (3) ATP synthesis in all these three processes.
 - (4) These processes take place only when light is presence.
 - (5) Enzymes contributes for these processes involved in chloroplast and mitochondria (.....)
- (08) Select the incorrect combination from following statements,
- (1) Iron oxidation - effect of photosynthesis.
 - (2) Proto cell - RNA accumulated into lipid bound vesicles.
 - (3) Bio-chemical evolution - bio synthesis of organic molecules.
 - (4) Genetic diversity among organisms - natural selection theory.
 - (5) Classify animals based on locomotory modes - Aristotle (.....)
- (09) Organisms belong to the group which bear prokaryotic cellular organization and do not consist peptidoglycan in cell wall are,
- (1) Unicellular as well as multicellular.
 - (2) Some species form symbiotic associations and live as aerobic organisms.
 - (3) Live only in extreme environmental conditions.
 - (4) Growth is inhibited when presence of antibiotics.
 - (5) Some species produce biogas by anaerobic decomposition of organic materials. (.....)
- (10) Kingdom plantae,
- (1) has independent embryo
 - (2) Pterophytes share a more recent common ancestor with seed plants.
 - (3) Megaphylls contributes for efficient photosynthesis.
 - (4) All heterosporous plants produce seeds.
 - (5) All plants posses internal fertilization and produce flagellated sperms. (.....)



- (15) ABC are labelled sucrose solutions with different molarities. Three *Alocasia* petioles which measured the initial curvature angle were immersed completely in each sucrose solutions. Then closed the petri dishes and kept them for 30 minutes for reach osmotic equilibrium . Collected data are given in the chart below. *Alocasia petioles* are named as P, Q, R & S.

Sucrose Solution	A	B	C
<i>Alocasia petioles</i>	P	Q	R
Angle of Initial curvature	60°	65°	68°
Angle of final curvature	55°	65°	72°

When explain the above observations select the incorrect statement.

- (1) P petiole placed in A solution has done endosmosis.
 - (2) R petiole placed in C solution has done exosmosis.
 - (3) No any net movement of water between Q petiole and B solution.
 - (4) To find the water potential of this experiment, a labotary graph is used.
 - (5) Concentration of isotonic solution which need to find the water potential of *Alocasia* leaf petiole is molarity of B solution. (.....)
- (16) Select the pair which occur instance I due to the incident II.
- A - I Loading of sugar into the sieve tube,
II Reduce water potential inside the sieve tube elements at the source.
 - B - I Bulk flow take place in phloem sieve tubes.
II Buildup pressure gradient.
 - C - I Sucrose is unloaded at sink, passively.
II Due to diffusion gradient.
 - D - I Loss of water from phloem to xylem by osmosis at sink.
II Due to pressure gradient.
- (1) only B (2) AB & C (3) AB & D (4) B & D (5) B & C (.....)
- (17) Which of the following is not a response of photomorphogenesis,
- (1) Flowering
 - (2) Branching
 - (3) Phototrohism
 - (4) Tendrils coil around a support
 - (5) Slowing down of hypo cotyl elongation (.....)
- (18) Which of the following is not a triple response in seeding,
- (1) Promote by ethylene hormone
 - (2) Inhibition of stem elongation
 - (3) Promotion of lateral expansion
 - (4) Promote dessication tolerance
 - (5) Promote horizontal growth (.....)



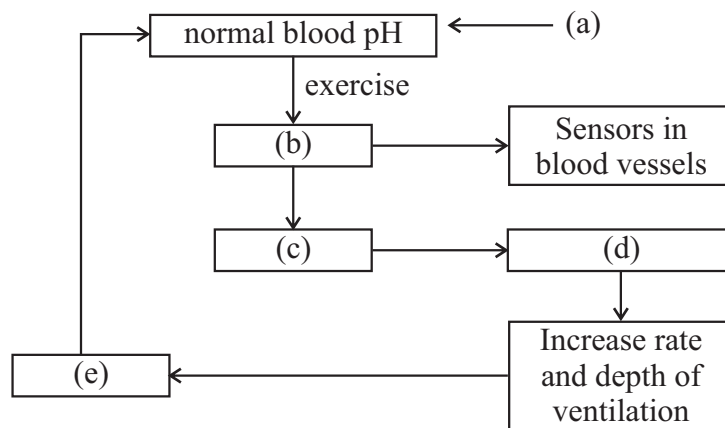
- (19) Select a tissue / cells of man which is not found from nasal cavity to respiratory surface,
 (1) A tissue with cells that are not in equal height.
 (2) mucus secreting cells and phagocytic cells.
 (3) Cartilage tissue.
 (4) Flat epithelial cells.
 (5) Brick - shaped cells with micro-villi. (.....)
- (20) Select the response which cannot agree regarding holozoic nutrition,
 (1) Ingestion - ingestion mode vary according to the environment.
 (2) Assimilation - take place outside the alimentary canal
 (3) Elimination - Excretion type
 (4) Absorption - cell take up small molecules
 (5) Digestion - convert into small molecules by breakdown bonds (.....)
- (21) Select the incorrect statement,
 (1) Saliva is released in to mouth before food is ingested.
 (2) Every three days, lining of the stomach replaced.
 (3) Lipid digestion is facilitated by bile salts.
 (4) Ileum of small intestine connected to large intestine at a T shape junction.
 (5) Between two pairs of columns of hepatocytes, there are sinusoids with have incomplete walls. (.....)
- (22) Select the correct statement regarding organization of vertebrate circulatory system,
 (1) Main blood vessels are arteries, veins and venules.
 (2) Within each type of blood vessels, blood flows in opposite directions.
 (3) Arteries further branch into capillaries within organs.
 (4) Very often capillaries are found between arterioles and venules.
 (5) All blood vessels can exchange materials with interstitial fluid. (.....)
- (23) Which of the following is correct regarding blood pressure of a person,
 (1) Always it has a constant value.
 (2) Blood pressure in the arteries and veins of systemic circulation help to flow of blood into organs.
 (3) Blood pressure falls of rest and increased during excitement.
 (4) Deposition of low density lipoprotein on artery wall caused for sustained reduction of blood pressure.
 (5) Diabetes mellitus, stress and sedentary life style caused for hypertension. (.....)
- (24) Certain statements are given below regarding respiratory pigments in animal kingdom,
 A - Respiratory pigments are organic compounds.
 B - Combine with oxygen where the partial pressure of oxygen is low.
 C - Haemoglobin is a pigment in hemolymph.
 D - Respiratory pigment Found only in vertebrate is Haemoglobin.
 E - Most Annelid blood included Haemerythrin.

Select the correct statements,

- (1) A, C and E (2) A, B and C (3) A, B and D (4) A and C (5) C and E (.....)

(05)

(25) A flow chart showing homeostatic control of breathing is given below,



(1) (a) - Normal blood pH level is 7.4.

(2) (b) - Rising level of CO_2 in tissues, falling blood pH level.

(3) (c) - Medulla detects decrease in pH of cerebrospinal fluid.

(4) (d) - Release signals from pons varoli.

(5) (f) - Blood CO_2 level falls and pH rise. (.....)

(26) Select the incorrect statement regarding internal defences in innate immunity.

(1) Second line defense mechanism in human body.

(2) Molecular recognition is taken place before their activity.

(3) Phagocytic cells and natural killer cells destroy pathogens by intra - cellular digestion.

(4) Interferons are proteins which activate macrophage.

(5) Complement proteins are inactive proteins a in blood plasma and plasma membranes. (.....)

(27) Select the response which correctly indicate the cells regarding acquired immunity and their function.

(1) T lymphocytes - Immune response of body fluids.

(2) Cytotoxic T cells - Produce anitibodies and detroy pathogens.

(3) Plasma cells - Destroy pathogens by pagocytosis.

(4) Helper T cells - Activate B lymphocytes to initiate antibody production.

(5) Memory B cells - Destroy pathogen in the first infection. (.....)

(28) Which of the following statement is correct.

(1) A person with weak ADH secretion may have dilute urine.

(2) Sensors in medulla oblongata are important in regulation of blood osmotic pressure.

(3) Acidic nature of urine causes kidney stones.

(4) In the longitudinal section of the kidney two areas of tissues can be seen to naked.

(5) Only waste products are accumulated in the blood in a kidney failure. (.....)



(29) Certain characteristics regarding excretory structures of animal world are given below,

- Specialized ciliated cells.
- Connected to a network of tubules.
- Tubules open to the outside of animals.

Animals possess above excretory structures are,

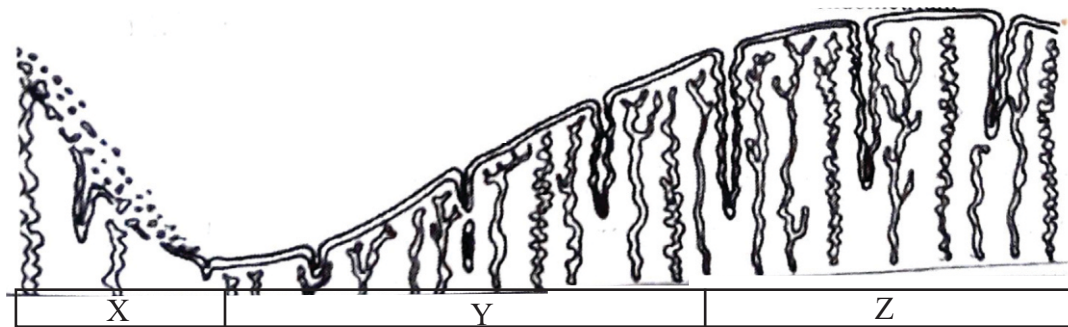
- (1) Platyhelminthes (2) Earthworm (3) *Planaria*
(4) Spider (5) Crustacea (.....)

(30) Select the response which gives the process of eye and brain in vision in correct order,

- a - Chemical changes happen in the photo receptive cells.
b - Ganglion cells form optic nerve fibers and transmit action potential to the brain.
c - Light rays coming from the objects are refracted and focused on the retina of eye.
d - Bipolar cells receive information from photo receptor cells.
e - Specific neurons in the retina can integrate information across the retina.
f - Visual objects are perceived in the correct way by the cortex of the occipital lobe of brain.

- (1) c, a, e, d, b, f (2) e, c, a, b, d, f (3) c, e, d, a, b, f
(4) c, e, a, d, b, f (5) c, e, d, a, b, f (.....)

(31)



One stage of reproductive cycle of female is given in above diagram. Select the incorrect statement,

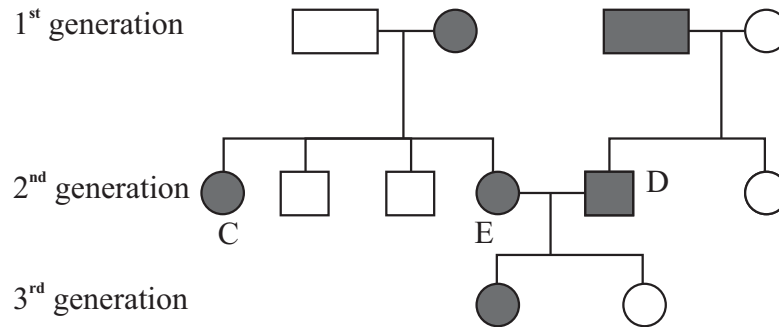
- (1) 'X' is menstruate flow of uterine cycle.
(2) Disintegration of corpus luteum of ovaries result 'X'
(3) Growing follicles of ovaries secrete oestradione and it caused for maintain 'Y' stage.
(4) Z is secretory phase - glands secrete nutrient fluid that sustain an early embryo.
(5) When uterus is in 'Z' stage, hypothalamus stimulates and increase FSH and LH secretion. (.....)

(32) Select the incorrect statement regarding human skeleton,

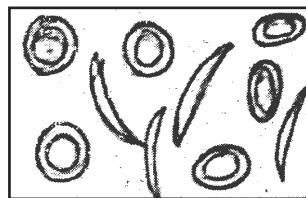
- (1) Human skeleton consist of two parts as axial skeleton and appendicular skeleton.
(2) Pectoral girdle and pelvis girdle possess two bones each.
(3) First rib is firmly fixed only to the sternum.
(4) In pronation, two bones of lower limb positioned parallel to each other.
(5) Tibia is the median bone of calf of lower limb. (.....)

(07)

- (33) Most suitable method to explain the organisms of test cross is,
- (1) Both bear recessive phenotypes.
 - (2) Both bear dominant phenotypes.
 - (3) One organism bear is homozygous and the other is heterozygous.
 - (4) One organism bear dominant phenotype and the other bear recessive phenotype.
 - (5) only one organism is homozygous. (.....)
- (34) Which of the following is incorrect statement regarding the pedigree chart. It is made based on rolling or non-rolling tongue,



- (1) In the above pedigree chart female depict by a circle.
 - (2) In first generation, It bear homozygous state for A and B characteristics.
 - (3) In second generation C is homozygous.
 - (4) Allel caused to show the characteristic of D get by his father.
 - (5) Probability of getting a daughter who do not show relevant character by the marriage of E and D is $\frac{1}{8}$ (.....)
- (35) Important of meta gene technology is,
- (1) To reveal the similarities and differences of DNA sequences within a species and between species.
 - (2) To determine the DNA sequence to a codon for polypeptide.
 - (3) To determine genetic disorders earlier.
 - (4) To study about endemic diseases.
 - (5) To ensure the identity of a person. (.....)
- (36) Following cells were identified when check a blood sample of a person.



Which of the following is incorrect.

- (1) This is a example for multiple trait.
- (2) This is a gene mutation & substitution.
- (3) Mutated allele is codominant.
- (4) Heretozygote mutated hemoglobin cannot be found in this gene locus.
- (5) Individuals with this disorder can suffer from aneamia (.....)

- (37) Select the correct statement,
- (1) Jungle squirrel and elephant - are threatened animals.
 - (2) Snake head and kithul plant - indigenous species.
 - (3) Kaluthara Golubella and Indian pitta- Invasive alien species.
 - (4) Gini andara and Nelli - plants found in savana.
 - (5) Kaluwara and Kothalahimbutu - Over collected plants. (.....)
- (38) Which of the following statement is correct regarding current environment problems in world,
- (1) Carbon particles suspended in the upper atmosphere cause global warming
 - (2) Depletion of ozone layer cause for increase global temperature and increase risks of eye disease.
 - (3) When acid rains occur pH value of water is around 5.6.
 - (4) Increase in global temperature, reduce carbon capacity of soil.
 - (5) Only climate changes caused for desertification. (.....)
- (39) Which of the following is correct regarding virus,
- (1) Creutzfeldt - Jakob disease caused by them.
 - (2) Adeno virus and rabies virus are abundant.
 - (3) In lysogenic cycle, viral DNA multiply without causing lysis of the host cell.
 - (4) In multiplication of virus, biosynthesis is taken place after the maturation and assembly.
 - (5) Virus synthesizes own proteins in host cells. (.....)
- (40) Which of the following response not included in post harvest loss.
- | | | |
|---------------------|-------------------------------|----------------------|
| (1) Commercial loss | (2) no harm to seed viability | (3) nutritional loss |
| (4) quality loss | (5) weight loss | (.....) |
- 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 ABD are correct (1)
 - If only ACD are correct (2)
 - If only AB are correct (3)
 - If only CD are correct (4)
 - If any other response or combination of responses is correct (5)
- (41) Select the correct statement regarding proteins,
- (A) Newborn synthesize polypeptides are primary structure of proteins.
 - (B) Certain proteins. Fate of protein according to the function is required for certain proteins.
 - (C) When forming myoglobin protein, it passes primary secondary, tertiary & quaternary stages respectively.
 - (D) Myosin is the contractile protein used in muscle contraction.



- (42) Which of the following statement is correct regarding phylum of annelida, Arthropoda and Echinodermata,
- (A) All are bilaterally symmetrical.
 - (B) Organisms of above phylums bear certain type of skeleton.
 - (C) Organisms of all three phylums have close circulatory systems with hearts.
 - (D) Annelida and Arthropoda bear well develop nervous system with cerebral ganglia.
 - (E) Organisms of all above phylum show cephalization and segmentation. (.....)
- (43) Which of the following do not occur in a plant shoot when it get unidirectional light,
- (A) Elongation rate of cells in the side of getting light is lower than the other side.
 - (B) Chemical Auxin is affected to above activity.
 - (C) Cells in the side which get light have high concentration of Auxine.
 - (D) Far red light is important for the above responses.
 - (E) Shows a positive phototropism and strengthen photosynthesis. (.....)
- (44) Select the correct responses regarding human endocrine glands and hormones,
- (A) Specific hormone can reach all the cells in the body.
 - (B) All hormones have proteneous composition.
 - (C) Oxitocin produce and secrete by posterior pituitary.
 - (D) Parathyroid hormone act on bone destroying cells.
 - (E) In human body, hormones produce and secrete by only endocrine glands. (.....)
- (45) Select the correct human genetic disorder regarding X chromosome,
- (A) Turner syndrome
 - (B) Hemophilia
 - (C) Sick cell anemia
 - (D) Klinefelter syndrome
 - (E) Cystic fibrosis (.....)
- (46) Which of the following is correct regarding hybridization,
- (A) Genetically unrelated pure bred plants or animals in the same species are mated with each other.
 - (B) Parental lines must be maintained.
 - (C) When hybrids are mated together, hybrid vihour decreases.
 - (D) Local true breeding varieties mature earlier than hybrids.
 - (E) Though the hybrids have a yield improvement, genetic disease resistance is low. (.....)



- (47) Select the correct statement regarding biomes in world,
- (A) Only tropical rainforest are distributed close to the equator and sub equatorial areas.
 - (B) Epiphyte are common in tropical rain forests and dry forests.
 - (C) Savana consist of scattered trees in a tall grass cover.
 - (D) Chaparral biome consist of dwarf forest and shrubs.
 - (E) Tall - grass prairie is now an endangered ecosystem (.....)
- (48) Select the incorrect statement regarding industries which used microorganisms,
- (A) Only primary metabolites are used as end products.
 - (B) Due to higher growth rate, they can convert the raw materials into products.
 - (C) To extraction of copper from lower grades of copper, aerobic bacteria *Psudomonas* is used.
 - (D) Hepatitis vaccine used in immunizations is produced by yeast and it is a subunit vaccine.
 - (E) In industrial microbiology, microorganisms can be considered as miniature chemical factories. (.....)
- (49) Select the correct statement regarding PCR.
- (A) This is used to copy sequences of DNA invivo.
 - (B) RNA sequence is used as primer.
 - (C) Type of heat resistant DNA polymerase enzyme is used.
 - (D) Annealing temperature will depend on the sequence and length of the primes.
 - (E) Same temperature is maintain in a thermal cycle. (.....)
- (50) Skm cells are,
- (A) Undifferentiated cells.
 - (B) Necessary to divide rapidly.
 - (C) Adult stem cells are found throughout the body.
 - (D) There are limitations using adult stem cells for tissue regeneration.
 - (E) Stem cells can be apply for repairing damaged heart muscle but can't use for repair damage spinal neurons. (.....)



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Third Term Test - Grade 13 - 2024

Index No. :

BIOLOGY - II

Time : 3 hours

Extra reading time 10 minutes

Biology - II - A

● Answer for all questions.

Structured essay - Part A

(01) (A) For the survival of human beings sustainable food production is necessary.

(i) a. What is known as sustainable food production.

.....
.....

b. What are the methods can be applied, which are based on knowledge in biology.

.....
.....
.....
.....

(ii) a. Draw the way of forming a dipeptide in the given space.

b. What is the test that can be used to identify peptide bonds in the laboratory.

.....

(iii) a. What is explained by base pair rule.

.....
.....

b. Mention an instance which can be happen complementary base pairing between RNA molecules.

.....
.....

(iv) a. What is measured by resolution power of microscope.

.....

(01)



(iv) b. What are the reasons for having high resolution power in electron microscope than light microscope.

.....

.....

.....

.....

(v) a. What is the sub cellular component which synthesizes membrane phospholipids.

.....

b. What are the two types of membrane bounded vesicles contain with enzymes.

.....

(B) (i) a. Mention the steps of leading a proliferation of cells and formation of a tumor.

.....

.....

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.....

.....

.....

(ii) a. Mention an instance which is transformed the energy in ATP in to mechanical energy.

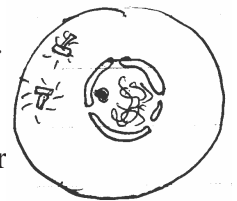
.....

b. What are the proteins which need for above mentioned process.

.....

(iii) a. What is the phase and the stage spent by the above mentioned cell.

.....



b. Mention a reason for selecting that phase and stage as your answer

.....

.....

(iv) a. Write the principal of limiting factors in photosynthesis.

.....

.....

.....

.....

b. A student is going to measure the rate of photosynthesis by increasing light intensity. what is the instrument which he need ?

.....



- (v) That student took the readings by increasing light intensity. He had selected 15°C and 25°C temperatures, When obtaining readings. If the CO₂ concentration is 0.04% draw the relevant graph which he drawn by using the reading he obtained.

(C) a. What is the organic compound which have been act as enzymes

.....

b. How long ago did plants begin to colonizing the land ?

.....

c. Mention an adaptation possess when colonizing land by plants.

.....

.....

.....

.....

(ii) a. Which characteristics get pass to the next generation according to the theory of Lamarck.

.....

b. A brown thallus was found in marine environment and it was identified as *Sargassum*. Write 02 morphological characteristics that helped to identify that organism.

.....

.....

(iii) a. During the evolution of plants two types of leaves evolved. Mention what are they?

.....

.....

b. Which of the above is the most efficient form of photosynthesis?

.....

(iv) State a similarity of *Aspergillus* and *Mucor* in their sexual reproduction.

.....

(v) a. Name the phylum which are exclusively marine, triploblastic and coelomic.

.....



b. Write the answer related to the phylum you mentioned.

(i) Circulatory system -

(ii) Skeletal system -

(02) (A) (i) a. What is the special ability shown by parenchyma cells.

.....

b. Mention an instance which above mentioned above mentioned ability is shown ?
.....

(ii) Write 2 advantages of thickening by lignin of vessel elements and tracheids in xylem.

.....

(iii) What are the types of tissues which produced by vascular cambium

.....

(iv) What are know as heart wood and sap wood.

a. Heart wood -

b. Sap wood -

(v) Which secondary tissue contributes the replacement of epidermis ?

.....

(B) (i) State what is heteromorphic alternation of generation.

.....

(ii) What are know as sori ?

.....

(iii) Sate what is photomorphogenesis

.....



(iv) Who are the organisms that cause biological stress in plants.

.....
.....

(v) Mention three groups of chemical compound in plants which show resistance mechanisms to biotic stress causing organisms before they attach.

.....
.....
.....

(C) (i) State what is epitope

.....
.....
.....

(ii) What are antibodies

.....
.....

(iii) State what is called secondary immune responses.

.....
.....
.....

(iv) Mention the immune responses which occurred in below instances.

a. The baby develops the resistance against some infectious diseases due to mother's milk -

.....
b. By polio vaccination -

.....
c. Treat poisoning from venomous snake -

.....
d. BCG vaccine which is used against tuberculosis -

(v) Name 3 typical allergy symptoms

.....

(vi) What are known as allergens

.....

(03) (A) (i) Mention the ways of protecting the stomach lining from the digestive action of HCl and pepsin.

.....
.....
.....
.....

(ii) What is known as respiratory pigment

.....
.....
.....
.....

(iii) State 3 functions of human blood.

.....
.....
.....
.....
.....
.....

(iv) a. State the reason, why secretion is considered as one of the most necessary process in the process of urine formation.

.....
.....

b. Mention a substance which secretes passively and 2 substances which secrete actively at the proximal convoluted tubule.

Actively -

passively -

(v) a. What is known as Menopause

.....

b. Mention the age usually menopause takes place..

.....

c. State the reason for menopause

.....
.....

(B) (i) Write 2 conditions in which Mendel's second law of inheritance applies

.....
.....

(ii) R and Q alleles must be present for the colour of a certain flower. When one of them is destroyed, white flower will be formed consider the below cross. $RRQq \times RrQq$

a. What is the probability that $RRqq$ will occur

.....

b. Drag the punnett square corresponding to the cross

c. Write the ratio of coloured flowers to white flowers.

.....



(iii) a. What is polygenic ?

.....

.....

.....

.....

b. Mention a character which inherited according to polygenic

.....

(iv) What is known as plant and animal breeding.

.....

.....

.....

.....

.....

(v) What is known as inbreeding depression

.....

.....

(vi) Mention three typical allergy symptoms

.....

.....

.....

.....

(vii) What are allergens?

.....

.....

(C) (i) State the function of restriction endonuclease in gene technology.

.....

.....

(ii) What is known as DNA probes?

.....

.....

.....

(iii) Mention two ways of labeling can be done in DNA probes?

.....

.....

(iv) What is the enzyme used in genetic engineering to form a DNA chain from RNA template?

.....



(v) Write three main steps in PCR cycle.

.....

.....

.....

(vi) What is the international agreement signed on biosafety to the convention on biological diversity.

.....

(04) (A) (i) State the meaning of below words.

a. Population

.....

.....

b. Pyramid of number

.....

.....

(ii) Mention the biome which shows following adaptations

a. Seed germination occurring only after a hot fire.

.....

b. Bearing needle like leaves and conical shape trees.

.....

(iii) a. Write 2 examples for bio diversity hot spots

.....

.....

.....

b. What is meant by "extinct"

.....

.....

c. Name 2 extinct animals.

.....

.....

(iv) a. State examples for a plant species endemic to Sri Lanka and animal species endemic to Sri Lanka.

.....

.....

.....



- b. Write 05 most important services provided by bio diversity in maintaining critical environmental functions.
.....
.....
.....
.....
.....
- (v) a. State 2 contribution factors for the ozone layer depletion.
.....
.....
- b. What is the International treaty designed to protect the ozone layer by phasing out the production of numerous substances that are responsible for deletion.
.....
- (B) (i) What are know as prions
.....
.....
- (ii) What are the conditions that should be maintained in hot - air sterilization.
.....
.....
- (iii) State 2 characteristics of pathogenic micro-organisms.
.....
.....
.....
.....
.....
.....
- (iv) a. Name the pathogens that cause given diseases.
* Tetanus -
.....
* Leptospirosis -
.....
- b. Name a viral disease that uses an inactivated vaccine
.....
- (v) Write an instance where mineralization helps plants.
.....
.....
.....



(iv) Name a species of fungus which cause food poisoning

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(C) (i) a. Mention 2 species that are commonly used in freshwater ornamental fish culture in Sri Lanka.

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b. Name 2 common diseases of fresh water ornamental fish species whose causing agent is bacteria

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(ii) State the 3 basic principles of food preservation.

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(iii) Name 2 measures to minimize post - harvest losses in domestic food processing.

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(iv) Biological knowledge is used to control dengue vectors, but there are limitations in that control. What are those limitations.

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(v) Name the parasite of filaria.

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.....

(40 x 2.5)



Essay

Answer 4 questions only.

- (01) Explain the regulation mechanism of enzymic activity in cells
- (02) a. Describe the structure of stomata in dicot leaf
b. Explain the process of stomatal transpiration.
- (03) Describe the structure and function of human vertebral column.
- (04) a. Explain the principles and main steps in purification of industrial waste water
b. Explain the sliding filament theory
- (05) a. Explain the response of plants for cold stress
b. Briefly describe the mutations due to alterations in chromosome number.
- (06) Write short notes on the following.
a. Conservation
b. Hearing
c. Importance of tissue culture technique