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DEPARTMENT OF EDUCATION - CENTRAL PROVINCE

G. C. E. (A/L) Practice Test - 2025

Biology I	09 S I	Grade 13	2 hours

Instructions:

- Answer all the questions.
- Write your index number in the space provided in the answer sheet.
- Read the instructions given in the answer sheet carefully.
- 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) in accordance with the instructions in the answer sheet.

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1. Which of the following statement is correct about characteristics of organisms.
   (1) The sum of all chemical activities taking place in an organism are anabolic reactions.
   (2) All changes that occur during the life span of an organism is development.
   (3) Ability to respond to stimuli from both internal and external environment is co-ordination.
   (4) Ability to respond to change over time as a result of genetic modification is evolution.
   (5) The genes that pass from one generation to the next and control specific physiological and morphological characters of organisms is Heredity.

2. Which of the following is correct about protein and lipid?
   (1) The basic unit of protein is amino acid and all amino acids are made up of asymmetrical carbon atom.
   (2) Albumin. Myoglobin and most of the enzymes, from a precise. compact, unique, functional and there dimensional shape.
   (3) Consumption of excess saturated facts and cis un saturated fats lead to health problems.
   (4) Hydrophobic nature of fatty acid is due to its' head region.
   (5) Lipids and proteins are biological molecules and polymers.

3. Which of the following statement is correct about cell junctions?
   (1) They connect the internal physical and chemical environments of adjacent cells.
   (2) Tight junctions connect the plasma membrane of adjacent cells by specific lipid molecules forming continuous seals around cells.
   (3) Gap junctions consist of special membrane proteins that surrounds the pore through which ions, sugars, amino acids may pass.
   (4) Plasmodesmata of all cells are membrane lined channels filled with cytoplasm.
   (5) Anchor junctions are mechanically attached the cytoskeletons of adjoining cells by microtubules for strong binding.

See Page two

4. Select the correct matching response from the following.

A – Prophase	P – Fragment of nuclear envelope.
B – Prometaphase	Q – Spindle microtubules get depolymerized.
C – Anaphase	R – Centrosome move towards opposite poles.
D – Telophase	S – Cell elongates as non-kinetochore microtubules are lengthen.

(1) A – P, B – R, C – S, D – Q
(2) A – R, B – P, C – S, D – Q
(3) A – R, B – P, C – Q, D – S
(4) A – R, B – S, C – Q, D – P
(5) A – S, B – R, C – P, D – Q

5. Which of the following is correct about ATP molecule?
(1) All cells synthesis ATP from oxidative phosphorylation.
(2) ATP bind to the same enzyme as inhibitor and slows down the catabolism during allosteric regulation.
(3) When ATP oxidized, the free energy yield is -30.5 KJ/mol
(4) Most biological reactions use the energy released during breaking of basal bonds of ATP.
(5) ATP is a nucleoside.

6. Select the correct statement.
(1) $NADP^+$ reductase and Rubisco are essential to complete the process of photosynthesis.
(2) In photosynthesis, oxygen is produced at PS I during cyclic electron flow.
(3) PEP in bundles heath cells is the first CO_2 acceptor during C_4 pathway of photosynthesis.
(4) One molecule of 3-PGA and a two Carbon product are produced during carboxylase reaction of photorespiration.
(5) Two pyruvate molecules produced in glycolysis of aerobic respiration enter mitochondrion by passive transport through the membrane.

7. Select the correct matching.

Organism	Cell wall component	Stored food
A – *Ulva*	cellulose	starch
B – *Gelidium*	cellulose	Floridian starch
C – *Sargassum*	cellulose and Alginic acid	crysolaminarin
D – Diatom	Pectin and silica	starch

(1) A and C (2) A and B (3) C and D (4) A only (5) all A,B,C,D

8. Which of the following is correct about sporophyte of kingdom Plantae?
(1) Saprophyte of Bryophyta is non- photosynthetic
(2) Lycophyta plants produce upright stems or ground hugging stems.
(3) Pterophyta plants are homosporous or heterosporous.
(4) Cycadophyta plants have vessels in xylem.
(5) All Anthophyta plants produce fertile seeds.

9. Which of the following feature/s show *Chytridium?*
A – Cell wall is made up of chitin.
B – Zygosporangium is produced in sexual reproduction.
C – Produce motile flagellated zoospores for reproduction.
D – Conidia produce during sexual reproduction.

(1) A and D (2) B and D (3) A and C (4) C and D (5) A and D

See Page three

10. Select correct statement.
(1) *Planaria* and hookworm show complete digestive system.
(2) Earthworm and spider have close circulatory system.
(3) Toad and parrot are endothermic.
(4) Snail and *Fasciola* have meta nephridia for excretion.
(5) Squid and sea star have endoskeleton.

11. Which of the following cell type consist all the following features.
A – Shorter and wider cells
B – have very thick secondary walls.
C – found in places where growth has stopped
(1) fibers (2) Collenchyma cells (3) sclereids
(4) Parenchyma cells (5) Companion cells

12. Which of the following is correct about pericycle of monocot root.
(1) It is in exterior to endodermis. (2) It has meristematic ability.
(2) Involve in formation of lateral roots. (4) Help in secondary growth.
(5) It is containing two or three parenchyma cell layers.

13. Select the matching response

Element	Deficiency Symptom
A – Mo	P – Reduce internode length
B – P	Q – Chlorosis in older leaves
C – Ni	R – thin stems
D – Zn	S – Death of leaf tips

(1) A – S, B – P, C – R, D – Q
(2) D – P, C – Q, A – R, D – S
(3) C – R, A – P, B – S, C – Q
(4) D – P, A – Q, C – S, B – R
(5) A – Q, B – S, C – P, D – R

14. Which of the following is correct about K^+ influx hypothesis
(1) The guard cells passively accumulate K^+ from neighboring epidermal cells.
(2) When K^+ concentration increases in guard cells it leads to inflow of water to epidermal cells.
(3) During day time, turgor pressure of guard cells increase .
(4) Provide energy to active transport of K^+, by the transfer of electrons during photosynthesis of neighboring epidermal cells.
(5) Turgor pressure in guard cells decrease and close stomata due to endosmosis during night.

15. Functions of the few Plants growth regulator are given below.
A - Leaf senescence
B - Apical dominance
C - leaf abscission

Which of the following set of growth regulators show opposing actions for each of the above functions.

(1) A – Abscisic acid and Ethylene, B – Auxin and Gibberellin, C – Ethylene and Cytokinin
(2) A – Cytokinin and Ethylene, B – Auxin and Cytokinin, C – Auxin and Ethylene
(3) A – Gibberellin and Cytokinin, B – Cytokinin and Ethylene, C – Auxin and Ethylene
(4) A – Auxin and Abscisic acid, B – Gibberellin and Auxin, C – Cytokinin and Ethylene
(5) A – Ethylene and Cytokinin, B – Abscisic acid and Auxin, C – Gibberellin and Auxin

See Page four

16. Features and functions of muscle tissue are given below. Select the correct response/s.
A – Lack striations – contribute to churning action of stomach
B – Muscle fibers are multi nuclei and striated – contractile unit of this muscle cell is sarcomere.
C – mussel cell is unnucleated and striated – show voluntary contractions.
(1) A and B (2) B and C (3) A and C (4) A, B and C (5) A only

17. Which of the following is/are correct about animal tissues.
A – Functional unit of nervous system is neuron
B – Smooth muscle cell is spindle shape and uninucleate
C – Matrix of cartilage is made up of chondroitin sulphate
(1) A only (2) A and B (3) A and C (4) B and C (5) A, B and C

18. Which of the following is/are correct.
A – Immunoglobulin and Lysosome are antimicrobial substances present in saliva
B – Lipase convert emulsified fat into fatty acids, glycerol and monoglycerides during fat digestion.
C – When chyme rich in fat, high level of cholecystokinin and secretin are secreted by duodenum
(1) A only (2) B and C (3) A and C (4) A and B (5) A, B and C

19. Which of the following contain only essential nutrients that can be taken through the diet of human.
(1) Lysine, fat, vitamin, minerals (2) Alanine, vitamin, fatty acids, minerals
(3) Vitamin A, B, C, D,E, Alanine, fatty acids, minerals (4) minerals, amino acids, fatty acids, vitamin
(5) Methionine, essential fatty acids, vitamin, minerals

20. Which of the following is correct about human blood circulatory system
(1) AV node lies in the myocardium of the right artium near the opening of the superior vena cava.
(2) The heart is completely divided in to right and left by a septum consisting two upper ventricles and two lower atria.
(3) QRS complex of an ECG represents ventricular systole
(4) Heam group of hemoglobin bind reversibly with oxygen and transport
(5) The force exert on heart during blood travel through vessels is the blood pressure.

21. Which of following statement is correct about human lymphatic system.
(1) It's connected with blood circulatory system only structurally.
(2) Tiny lymph vessels are in close contact with the capillaries of the blood circulatory system
(3) Lymph nodes are composed of white blood cells only
(4) Liver and spleen act as lymph organs
(5) The composition of the lymph is not same as interstitial fluid.

22. Steps occurs during the blood vessel is damaged are given below.
A – Platelet plug provides instant protection against blood loss.
B – Thrombin converts fibrinogen in to fibrin.
C – When connective tissues are exposed, platelets in blood adhere to the collagen fibers in connective tissue.
D – Platelets, damaged cells, plasma and enzymatic cascade convert prothrombin to thrombin.
E – Activated thrombin form more thrombin.

Which of the following shows the correct of above events.
(1) ABCDE (2) BACDE (3) CADBE (4) CAEBD (5) ACBDE

See Page five

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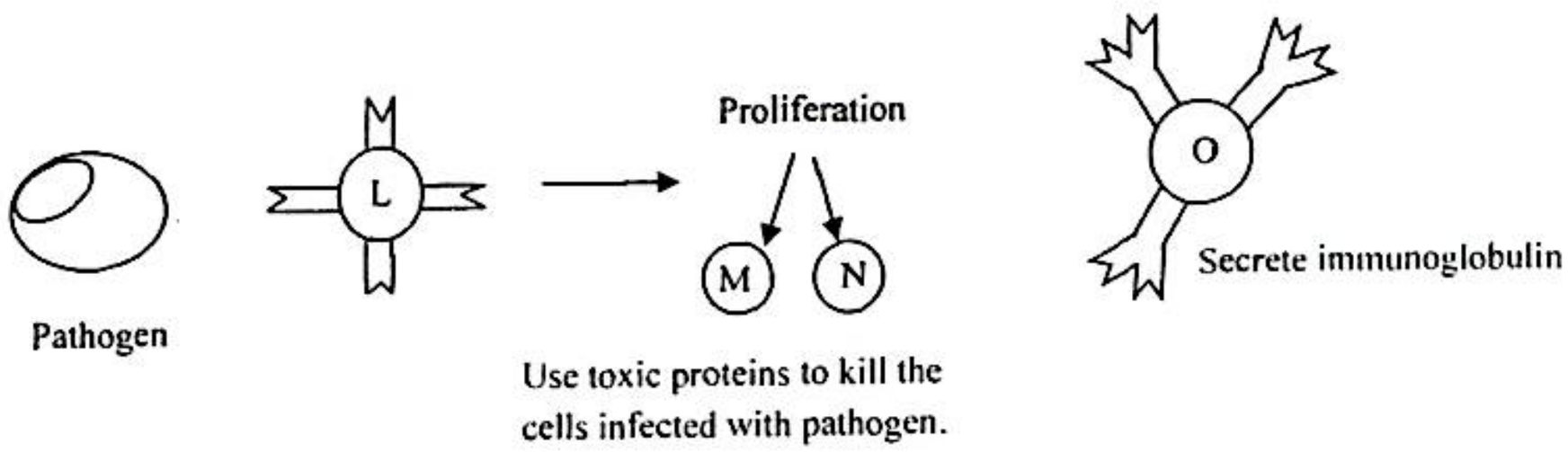
23. Select the correct response from the following.

A - Alveoli
B – Intercoastal muscles
C – diaphragm

P – volume of the thoracic cavity increases due to contraction.
Q – volume of the thoracic cavity decreases due to relaxation.
R – Prevent collapse of alveoli with high surface tension due to Surfactant

(1) A – R, B – P, C – Q
(2) A – Q, B – P, C – R
(3) A – P, B – Q, C – R
(4) A – Q, B – R C – Q
(5) A – R, B – Q, C – R

24. A process of acquired immunity of human is given below L, M, N and O are respectively.



(1) B lymphocyte, B plasma cell, helper cell, T lymphocyte
(2) T lymphocyte, T helper cell, T cytotoxic cell, B plasma cell
(3) B lymphocyte, Toxic T cells, T helper cell, B plasma cell
(4) B plasma cell, T helper cell, T lymphocyte, cytotoxic T cell
(5) T lymphocyte, cytotoxic T cell, T helper cell, B plasma cell

25. Which of the following is an auto immune disease,

(1) AIDS
(2) Rheumatoid arthritis
(3) Type II Diabetes mellitus
(4) Hemophilia
(5) Trisomy 21

26. Which of the following is correct about human excretory system

(1) Renal cortex is composed of renal pyramids which have striated appearance
(2) Cortical nephrons extend deep in to the medulla
(3) At the proximal convoluted tubule, H^+ secrete actively and NH_3 secrete passively
(4) ADH affect on proximal and distal convoluted tubules.
(5) During formation of diluted urine, water reabsorption increases through osmosis.

27. Select the correct matching.

Structure	Function
A – Hypothalamus	P – co-ordinates auditory and visual reflexes
B – mid brain	Q – co-ordinate large scale body movements such as climbing and running.
C – Cerebellum	R – co-ordinates voluntary muscle movements
D – Pons varolii	S – initiates fight or flight response

(1) A – S, B – Q, C – R, D – P
(2) A – S , B – P , C – R, D – Q
(3) A – P, B – S, C – Q, D – R
(4) A – Q , B – P , C – S, D – R
(5) A – R, B – P, C – Q, D – S

See Page six

28. Which of the following statement is correct about human eye.
    (1) By changing the thickness, the lens can vary its refractive power.
    (2) Vitreous humor maintain enough intra ocular pressure to support the choroid against retina.
    (3) Rods visual pigment is photopsin and enable to see black and white
    (4) Monocular vision is important to see three-dimensional vision, relative distance, depth, height and width.
    (5) The stimuli from light rays on retina reach to ganglion cells from bipolar neuron, photoreceptor layer and pigmented epithelium respectively

29. Which of the following order is correct about transmission of nerve impulses through chemical synapse.
    A – Ca^{2+} diffuse in to presynaptic terminals and rise Ca^{2+} concentration
    B – diffuse across the synaptic cleft.
    C – An action potential at an axon terminal depolarizes the plasma membrane of presynaptic cell.
    D – Binding of synaptic vesicles containing neurotransmitters to the presynaptic membrane and release them in to synaptic cleft.
    E – Neurotransmitters bind and activates specific receptors in the post synaptic membrane.
    (1) CADBE (2) CDABE (3) ADBEC (4) EBDAC (5) BDACE

30. Select the Correct statement
    (1) Menopause of women takes place between the ages of 40-55.
    (2) Around 7 days, after fertilization the morula attaches to the endometrium of the mother's uterus.
    (3) Yolk sac contributes to the cells that will become blood cells.
    (4) Thinning and opening of uterus, delivery of the baby, and expel placenta through vagina during parturition.
    (5) Vasectomy surgical method used for females as a permanent birth control method.

31. Which of the following statement is Correct about human skeletal system
    (1) Odontoid process of Atlas pivot joint with Cranium
    (2) Temporal bone contain zygomatic process, coronoid process and styloid process
    (3) The secondary Curvatures are concave towards the anterior and cervical and lumbar Curvatures are included it
    (4) Human foot has one longitudinal arch and two transverse arch.
    (5) In Osteoporosis the bone reabsorption rate deposition rate over the deposition rate.

32. Diseased male for Hemophilia is married a Woman. They had a Son with Hemophilia. which of following statement is correct according to the above description.
    (1) They won't have Carrier daughters with Hemophilia.
    (2) Woman and all daughters of them are Carriers.
    (3) The probability of having a healthy son among Sons is 1/2.
    (4) If the above man married a healthy non- Carrier female, they would have diseased children.
    (5) The probability of having a Carrier daughter is ½.

33. Which of the following is correct about mutations.
    (1) Meaning of the primary structure of the polypeptide Chain is not changed in missense mutation.
    (2) In silent mutation, form non-functional shorter polypeptide chains.
    (3) There is no change in the length of the gene during substitution.
    (4) In translocation, reduction of chromosomal number occurs.
    (5) Aneuploidy is resulted by the mistakes of mitosis.

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34. Which of the following is advantage of using STR markers?
(1) highly variable polymorphism.
(2) They occur rarely in genome.
(3) cannot be easily amplified by PCR
(4) Small no. of characterized STR's is available.
(5) Since they are coding do not make impact on phenotype.

35. Which of the following is correct about plant species and Terrestrial ecosystems Of Sri Lanka.
(1) Hal - Tropical montane forests
(2) Keena - Tropical wet low land rainforest
(3) Weera - Tropical thorn Scrubs.
(4) Bulu – Savana
(5) Ranawara - Tropical dry mixed evergreen forests.

36. Which of the following is correct about factors contribute on global warming and climate change.
(1) Black carbon particles are suspended in top atmosphere.
(2) Terrestrial plants are responsible for the (60%-70%) of absorption atmospheric Carbon.
(3) Deforestation reduce the carbon sequestration compacity.
(4) Main source of carbon monoxide is anaerobic decomposition.
(5) N_2O is not affecting to global warming.

37. Select the matching response from the following

Antibody	Action
A - Daptomycin	P - Inhibition of protein synthesis
B -Tetracycline	Q - Disrupting plasma membrane
C-Rifampin	R - Inhibition of DNA/RNA synthesis

(1) A-R , B-P , C-Q,
(2) A-Q , B-R, C-P
(3) A-P , B-Q , C-R
(4) A-Q, B-P , C-R
(5) A-R, B-Q, C-P

38. Select the correct matching
(1) Vitamin B_{12} - *Acetobacter* sp.
(2) Protease - *Aspergillus oryzae*
(3) Tetracycline - *Streptomyces griseus*
(4) Cheese - *Streptomyces*
(5) Citric acid - *Lactobacillus bulgaricus*

39. Which of the following is correct about N-cycle
(1) *Pseudomonas* Sp. Converts nitrate in to molecular nitrogen.
(2) Nitrification is the process of reduction of nitrogen in the ammonium ion to produce nitrate.
(3) In dry soil ammonia converts in to ammonium ion.
(4) Denitrification frequently occurs in waterlogged soils due to presence of high oxygen.
(5) Ammonia in wet soil rapidly disappear in to the atmosphere.

40. Which of the following features are relevant to embryonic stem cells.
A - They have potential to develop into variety of different Cell types.
B - Blastocyst is the source of embryonic stem cells.
C - Embryonic stem cells are found throughout the body.
D - Can be differentiated into variety of mature cells with specialized functions.

(1) A only
(2) B and C
(3) A and D
(4) A,C,D
(5) A,B,D

See Page eight

- **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. Select correct statement/s.
A. Generate greater Chance for the reaction to occur continuously due to increase the speed of enzyme and substrate molecules with increase of temperature.
B. Nuclease enzyme is sufficient during exonuclease activity in nucleotides.
C. Drugs used against microbes are reversible inhibitors
D. ADP bind to the enzyme as an activator during allosteric activation.
E. Lysozyme enzyme in digestive system is a Lipid digesting enzyme.

42. Select the correct statement/s.
A. Chordates and other animal phyla originated 670 million years ago.
B. Large trees diversified Since 380 million years ago.
C. With the emergence of non-vascular plants, they are differentiated in to roots, stems and leaves
D. Lobed - finned fish were formed about 365 million years ogo.
E. Colonization of land by fungi plants and animals 700 million years ago.

43. Which of the following is/are function/s of epidermis of plant root.
A. Cuticle prevent loss of water
B. Guard cells help gaseous exchange
C. Defense against physical damage
D. Root hairs involve absorption of water and minerals
E. Hair like trichomes reduce water loss

44. Which of the following hormone/s mediate long-term stress response.
A. Epinephrine B. Norepinephrine C. cortisol
D. Aldosterone E. Adrenalin

45. "Some hormones secreted by the anterior pituitary redirect the Chemical signals from hypothalamus to other endocrine glands". Select from the following above type of hormone/s.
A. Adrenocorticotrophic hormone B. Thyroid stimulating hormone
C. Prolactin D. GHRIH
E. PRH

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46. Select the correct statement/s.
    A. Complete dominance – The phenomenon of dominant allele completely masking the recessive phenotype, resulting similar phenotypes for homozygous dominant zygote as well as heterozygous zygote.
    B. Co-dominance – heterozygote state, expression of both alleles contributes equally to the phenotype.
    C. Polyallelism – Certain trait is determined by the combination of all three types of alleles.
    D. Pleiotropy - expression of a single gene affects the expression of multiple traits which are not related to each other.
    E. Human sex-linked characteristics – Turner syndrome is a human sex-linked feature.

47. Select the correct statement/s about GM plants.
    A. Canola – Increased triglyceride component.
    B. Papaya – Produce new varieties of papaya resistant to papaya ringspot virus.
    C. Golden rice – Produced by increasing the level of pro vitamin B
    D. Watermelon – delayed fruit ripening to increase the flavor and reduce the rate of softening.
    E. Tomato – reduce oxidation and produce non-browning tomato.

48. Select the correct statement/s about biome.
    A. Grasses in Savana have a very good underground connectivity.
    B. There are tough evergreen leaves in woody plants to survive in droughts occur chaparral.
    C. Stratification cannot be seen in Temperate broad leaf forest.
    D. In Northern coniferous forest temperature is -50°C in winter.
    E. Water drainage deeply to the soil in Tundra.

49. To Which compounds that the carbohydrate on food convert using micro-organisms
    A. Gases
    B. Hydrogen sulphide
    C. food acid
    D. Alcohol
    E. Glycerol

50. Which of the following statement/s is/are correct about Filaria parasite
    A. Parasitic larvae penetrate skin and entered into the human vascular system.
    B. Microfilaria are the migratory form Seen in human body
    C. Disease Causing agent of filaria is a protozoan.
    D. Microfilaria transfer to mosquitoes from human.
    E. No. of people in a population is affected to the spread of disease

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DEPARTMENT OF EDUCATION - CENTRAL PROVINCE

G. C. E. (A/L) Practice Test - 2025

Biology II	09	E	II	Grade 13

Three Hours

Additional Reading Time – 10 min

Use additional reading time to go through the question paper, select the questions you will answer and decide which of them you will priorities.

Index No.: .....

Instructions: • This question paper comprises Part **A** and Part **B**. The time allotted for **both parts** is **three hours.**

PART A - STRUCTURED ESSAY

- Answer **all four** questions in this paper itself.
- Write your answers in the space provided for each question. Note that the space provided is sufficient for your answer and extensive answers are not expected.

PART B - Essay

- Answer **four** questions only. At the end of the time allotted for this paper, before handing over tie the two parts together so that Part A is on the top of Part B.
- You are permitted to remove only Part **B** of the question paper from the examination hall.

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For Examiners' Use Only

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

Total

In Numbers	
In Letters	

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Part A – Structured Essay
Answer all questions in this paper itself.
(Each question carries 100 marks.)

1.

(A)(i) Write a main function of the following nucleotides.

a) NAD^+ - .....

b) FAD - .....

(ii) a) What is the cohesion of water?

.....

b) Mention a process that occurs in a plant body due to cohesive behavior in water.

.....

(iii) Write the constituent of animal cell membrane which perform the following functions.

a) Recognition of cells - .....

b) Transport ion and polar molecules - .....

c) Provide rigidity and stability to the membrane - .....

(iv) Write the organelle and the enzyme for the following functions occur in a cell.

	Organelle	Enzyme
a) Catalyzing breakdown of organic compounds	.....	.....
b) Breakdown of H_2O_2	.....	.....

(B)(i) a) What is the longest phase in cell cycle?

.....

b) Mention the relevant phase of cell cycle in which the following events occur.

- Production of cellular organelle - .....
- Formation of chromatin - .....
- Nucleoli get disappeared - .....

(ii) State the specific protein which contribute to from following parts.

a) Formation of spindle microtubules - .....

b) Attaching Chromosomal arms of sister chromatids - .....

c) Attaching sister chromatids at the centromere - .....

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See page three

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(iii) Mention the difference of causing problem between benign tumor and malignant tumor.

.....

.....

.....

.....

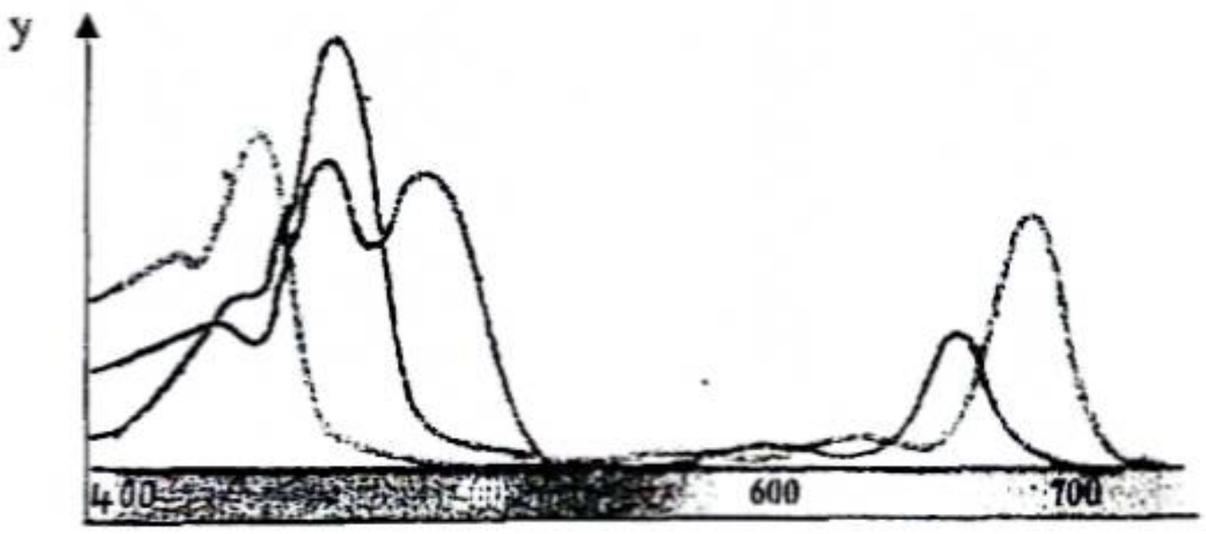
(iv) What is 'Metastasis'?

.....

.....

.....

(C) (i) The following shows the spectrum relevant to Photosynthesis.



a) Define the Above spectrum.

.....

.....

b) State a conclusion from the above graph given.

.....

.....

.....

(ii) a) What is the Photosynthetic pigment contribute to the Photoprotection?

.....

b) Mention an importance of Photoprotection.

.....

.....

(iii) a) State the source of O_2 and the location where it produce .

Source - .....

Location - .....

b) Answer the following parts in considering C_4 plants.

- Write a structural feature of mesophyll cells.

.....

- Write a functional feature of mesophyll cell.

.....

See page four

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(iv)Complete the following table about Anaerobic cellular respiration.

Type of anaerobic respiration	Final hydrogen acceptor	Commercial product produced	Microorganism involved

(v) Mention the number of ATP produced, when one glucose molecule is subjected cellular respiration in following events.

a) Substrate phosphorylation during Krebs cycle - .....

b) Oxidative phosphorylation during electron transport chain – .....

100

(02)

(A) (i) Write 2 principles of Lamarck Theory.

.....

.....

(ii) What is the "Phylogenic species concept"?

.....

.....

(iii) State two generic names of kingdom Protista who possess Contractile and food vacuoles

.....

(iv) Complete the following dichotomous key.

Obelia, Mite, Sand dollar, leech, *Taenia*, hook worm

1. Bilateral symmetry present - .....
   Radial symmetry present - .....

2. Cylindrical body present - .....
   Cylindrical body absent - .....

3. Segmented body present - .....
   Segmented body absent - .....

4. Tentacles present - .....
   Tentacles absent - .....

5. exoskeleton present - .....
   exoskeleton absent - .....

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(B)(i) Mention two places where intercalary meristem present.

.....

.....

(ii) What is the reason of having vertically arranged leaves in grasses.

.....

.....

(iii) What is the method of absorption of mineral ions to the plant from the soil solution.

.....

(iv) a) What are Statoliths?

.....

b) Briefly state what happens to Ca^{2+} and Auxin during aggregation of statoliths at low points of root cap Cells.

Ca^{2+} - .....

Auxin - .....

(v) a) What is the laboratory apparatus used to measure the rate of Transpiration in a stem.

.....

b) What is the reason of cutting and fixing the plant twig to the apparatus under Water?

.....

c) What is the measurement you obtained.

.....

d) What is the assumption used in above experiment.

.....

(C) (i) a) What is the most widely distributed connective tissue type in vertebrate body?

.....

b) Write two functions of glial cells found in vertebrate nervous system.

.....

.....

(ii) Define the following feeding mechanism of animals and give one example to each.

a) Bulk feeders - .....

.....

Eg :- .....

b) substrate feeders - .....

.....

Eg :- .....

(iii) a) Write the location of cardiac sphincter found in human digestive system.

.....

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b) Briefly state how the food digestion occurs with Trypsin and chymotrypsin in human small intestine.

.....

.....

(iv) a) Name three basic components in an animal circulatory system.

.....

b) The pressure within the arteries in ejection of blood at complete cardiac diastole is 110 mmHg. The pressure produced within the atrial system when the left ventricle contracts and pushes blood into the aorta is 140 mmHg.
Express the blood pressure of the above person as word equation and with numerals.

.....

.....

.....

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(03)

(A) (i) Write two characteristic features of efficient respiratory surface.

.....

.....

(ii) a) Food is not entered to respiratory tract during swallowing. explain why?

.....

.....

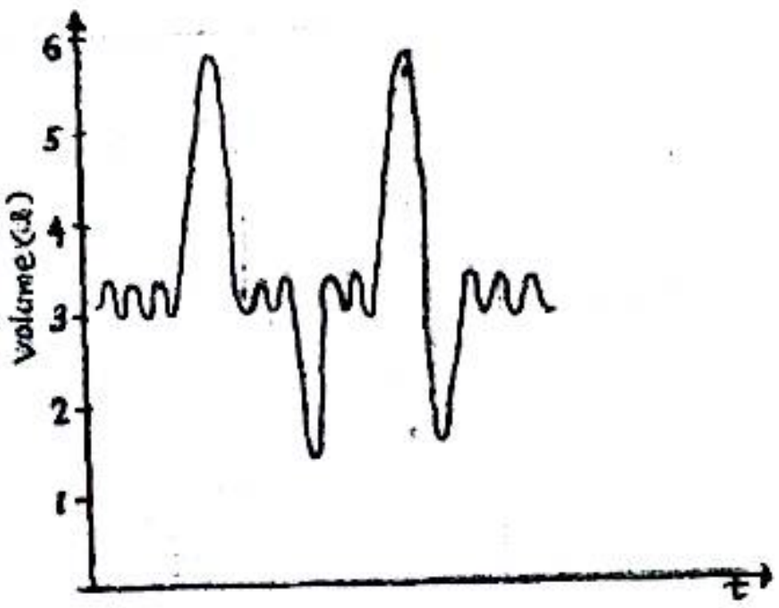
b) Briefly explain how Nicotine in cigarette smoke affect to the blood circulatory system.

.....

.....

.....

(iii) The below diagram shows the lung volumes and capacities. Using the below graph answer the following questions.



a) Show the inspiratory capacity as x on the diagram.
b) Show the functional Residual capacity as y on the diagram.

(iv) a) what is the function of Histamine during inflammatory response.

.....

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b) Readymade human serum antibodies used as a treatment, when hepatitis A virus entered the human body. What is the type of immunity he obtained.

.....

(v) a) Name the 2 types of Nephrons found in a human kidney.

.....

.....

b) Name two ions that secrete in proximal convoluted tubule of human nephron passively and actively.

Passive - .....

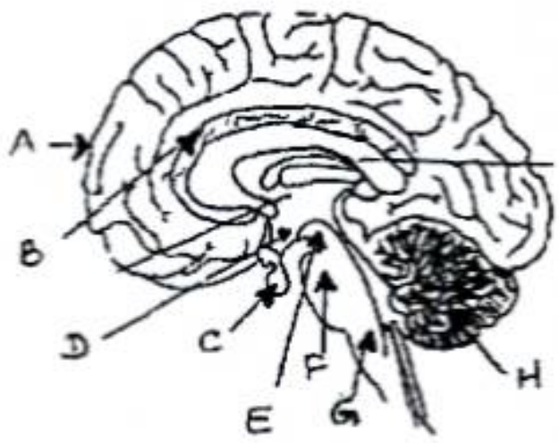
Active - .....

(B) (i) Write two functions of cerebrospinal fluid.

.....

.....

(ii)



The above diagram is the longitudinal view of the human brain.

a) Label the following parts and write a function to each.

Part	function
B -	.....
H -	.....

b) Write the English letters of the parts in above diagram which contribute to form the brain stem.

.....

c) Write the English letter of the above labelled diagram which consist I and II ventricles.

.....

(iii) a) What is the functional unit of the vertebrate nervous System

.....

b) What is the progressive motor disorder that leads to lack of control and coordination of muscle movements

.....

c) What is the most abundant photoreceptor cell type present in human eye.

.....

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(iv) a) Write functions of the following hormones.

Parathyroid - .....

Prolactin - .....

b) Name a hormone which contribute to generate heat when the human body temperature low

.....

(C)(i) a) Name a vertebrate organism who shows the parthenogenesis.

.....

b) Who are unisexual organisms?

.....

(ii) a) In which cells that meiosis I occur during spermatogenesis?

.....

b) What is the hormone secrete from the cells which are extend from the wall of the seminiferous tubules to the lumen?

.....

c)



The above diagram shows the relative amount of two ovarian hormone levels in blood which is related to the female reproductive system.

Name the hormone A and B.

A - .....

B - .....

(iii) a) Name major types of skeletons found in animal kingdom.

.....

.....

.....

b) What are fontanelles?

.....

(iv) Name two main types of joints in the human skeletal system.

.....

.....

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(04)

(A) (i) a) What is a test cross?

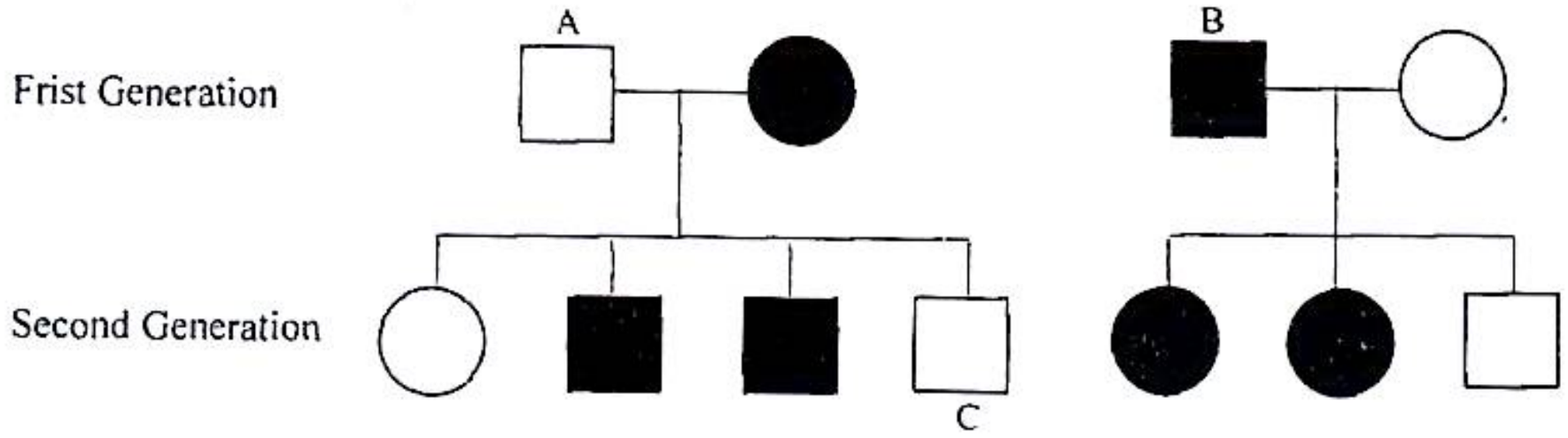
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.....

b) What kind of organism should use in above cross definitely.

.....

(ii) Answer the following question using pedigree given below.



The above pedigree shows the Mendelian inheritance pattern of attached and detached earlobe in human. Take dominant allele as F and recessive allele as f. Shaded region express the dominant trait.

a) What is the dominant trait?

.....

b) Write the genotypes and phenotypes of the following.

	Genotype	Phenotype
A -	.....	.....
B -	.....	.....
C -	.....	.....

(iii) Write 03 conditions that fulfill the population which is not evolving and approaching the Hardy – Weinberg equilibrium.

.....

.....

.....

(iv)Name the enzyme/protein which contribute the following functions, during DNA replication.

a) Prevent re-paring of the separated DNA stands and to stabilize them .....

b) unwind the double helix and separate two stands of DNA molecule with the expenses of ATP - .....

(v) a) What is a Recombinant DNA molecule?

.....

.....

.....

b) Write the generic name of the soil bacteria used in recombinant gene transfer?

.....

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(B) (i) a) What is the habitat of an organism?

.....

b) Name two environmental factors used to describe the habitat.

.....

.....

(ii) Name two common sea grass species found in Sri Lanka.

.....

.....

(iii) What is the principle goal of conservation.

.....

(iv) Write three generic names of bacteria who use Inorganic chemicals as source of energy and Inorganic carbon as source of carbon

.....

.....

(v) What is the major disadvantage of UV radiation in sterilization.

.....

(C) (i) a) What is contain in toxoid vaccine.

.....

b) Name two diseases that toxoid vaccines are used?

.....

(ii) What is the reason for not practical to test water sample for pathogens.

.....

(iii) What are endophytes?

.....

(iv) a) What is the most common benefit of tissue culture?

.....

b) Mention the scientists who introduce the concept of totipotent.

.....

.....

(v) Write 3 basic principles of food preservation.

.....

.....

.....

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DEPARTMENT OF EDUCATION - CENTRAL PROVINCE

G. C. E. (A/L) Practice Test - 2025

Biology II	09	E	II	Grade 13

Instructions:

* *Answer **four** questions only.*

Give clear labelled diagrams where necessary.

(Each question carries 150 marks)

AL API (PAPERS GROUP)

Part B – Essay

(5) a) Explain the process of producing one glucose molecule in stroma of chloroplast during photosynthesis.

b) Describe the basic chemical features of polysaccharide using suitable examples.

(6) a) Briefly describe the process of primary growth of shoot.

b) Explain the life cycle of *Nephrolepis*.

(7) a) Explain the exchange of gases from lungs to blood and blood to tissues during the process of human Respiration.

b) Describe the Artificially acquired active immunity.

(8) a) State the basic features of sensory receptors.

b) Explain the functions of human skin.

c) Explain the positive feedback mechanism operate in child birth.

(9) a) Describe the contributing factors and effects of acid rain.

b) Explain the role of micro-organisms during nitrification and denitrification of nitrogen cycle.

(10) Write short notes.

a) Polyallelism

b) DNA library

c) Protected cultivation of crops.

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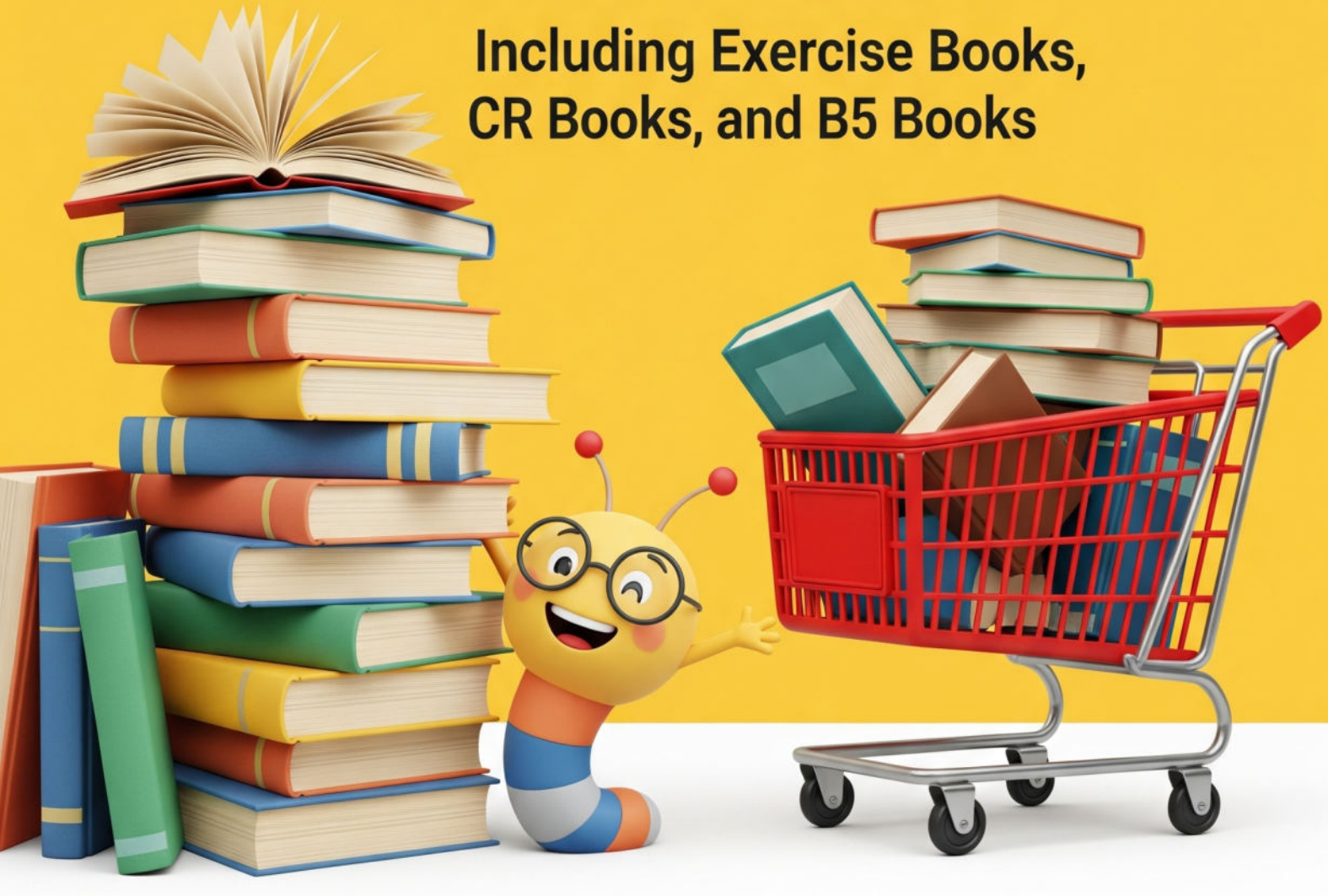
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