



Third Term Test - Grade 13 - 2018

Index No :

Biology I

Two Hours Only

Important

Answer All Questions

- ❖ Answer all questions.
- ❖ Write your Index number in the space provided in the answer sheet.
- ❖ When you select the response which you consider to be the best answer to a question mark your response on the answer sheet according to the instructions given in it.

01. Several compounds of living matters are given below. Which of the following compound consists of both hydrophilic and hydrophobic part.

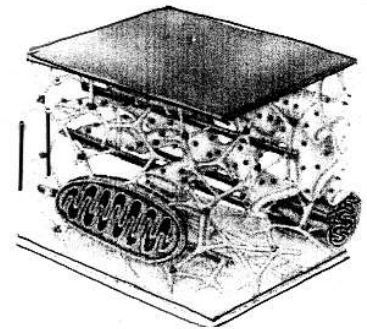
- | | | |
|----------------|-------------|-----------------|
| 1. Starch | 2. Glycerol | 3. Phospholipid |
| 4. Cholesterol | 5. Glucose | |

02. Select the correct relationship regarding the property and the role of water.

- | | |
|--------------------------------|--|
| 1. High surface tension | – transporting substances. |
| 2. High specific heat capacity | – Cooling the body surfaces |
| 3. Transparency | – Components of protoplasm |
| 4. Chemical Property | – Reactant in some bio chemical process. |
| 5. Polarity | – Maintaining turgidity of a cell. |

03. The statements regarding on the structure depicted are given below,

- a - found in all living cells.
- b - Dynamic structure.
- c – Made of protein filament structure.
- d - Helps in cytoplasmic streaming.



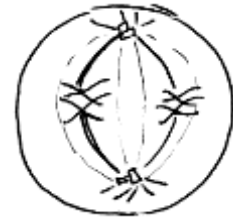
Which one of the following is correct regarding the above statement.

- | | | |
|------------|-----------------|--------------|
| 1. a and b | 2. b and d | 3. a,c and d |
| 4. c and d | 5. a,b, c and d | |

04. Which one of the following statements regarding enzymes is incorrect?

- 1. Co enzymes need for functioning of every enzymes.
- 2. The main role of enzyme is that minimizing of activation energy
- 3. Enzymes inactivate at extreme pH values.
- 4. The action of salivary amylase is increased by Cl^- ions.
- 5. Active sites of enzyme are fixed by some inhibitor molecules.

05. The cells depicted in the diagram, may be,
1. a cell in the shoot apical meristem.
 2. a cell in root apex of anion.
 3. Spore mother cells
 4. A cell which can exhibit in gametogenesis of animals.
 5. A cell in growing embryo of animals.



06. Which of the following is the number of chromosomes in first nuclear division of a cell of $2n = 4$ Which carries meiosis.
1. 4
 2. 16
 3. 2
 4. 8
 5. 10

07. The statements regarding the kingdom which *chlamydomonas* belongs are given below. Which of the following is incorrect statement regarding that kingdom.
1. Consists various storage food.
 2. Having unicellular, multicellular or colony forms.
 3. All organisms comprise chlorophyll *a*.
 4. Posses living forms which exhibits or do not exhibit appendages only.
 5. Some forms only possess cell wall.

08. Which of the following characteristics belong to only bryophytes but not in pterophytes and Lycophytes.
1. Producing spores within the sporangium by meiosis.
 2. Having photosynthetic gametophytes.
 3. Having independent and photosynthetic sporophyte with xylem vessels.
 4. Possession of dominant sporophyte and phloem tissues.
 5. Exhibition of homosporous.

09. The several statements regarding a type of fungi which produce antibiotic for inhibiting of synthesizing of bacterial cell wall are given below. .
- a - Hyphae in mycelium are septate.
 - b - Endogenous spores are produced in asexual reproduction.
 - c - Ascocarp is produced in sexual reproduction.
 - d - Mycelium is vegetative body of all members.

Which of the following is correct regarding the kingdom does the fungi belong.

1. a and c
2. a and b
3. a,c and d
4. c and d
5. a,b, c and d

10. The followings are characteristics of a certain plants.
- Sporophyte never dependent on the gametophyte.
 - Having meristematic power by pericycle in the root group of plant.
 - Obtaining meristematic power by pericycle in the root.

Which of the following group of plant is correct regarding the above statements.

1. Anthophyta
2. Coniferophyta
3. Monocotyledonae
4. Dicotyledonae
5. Hibiscus

11. Which of the following regarding the animal given in the diagram is incorrect. ?

1. Possession of a cartilaginous skeleton made up of mesoderm.
2. Running of the vertical coloum upto upper lobe of the caudal fin.
3. Having ventral mouth with bony teeth.
4. Unisexual and exhibit oviparity or ovoviviparity.
5. Possession of closed circulatory system with ventral heart.



12. The below 'A' state some common features of kingdom Animalia and B states relevant phyla.

A	B
a – well development coeloms	p – Coelenterata
b – absence of segmentation.	q – Mollusca
c – exhibition of regeneration	r – Annelida
d – Having statocyst	s – Arthropoda

Which of the following.

1. pq 2. rs 3. pr 4. ps 5. qs

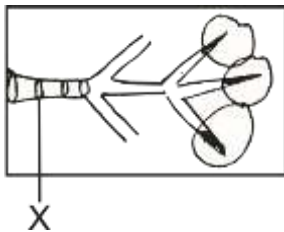
13. A few teeth that shaded off from a person's mouth were found. One of the tooth consist three roots and four cusps. Which of the following indicates the jaw types of teeth and function of the teeth correctly.

- | | |
|--------------------------|--------------------------------|
| 1. Upper jaw, pre molars | - grinding and crushing foods. |
| 2. Upper jaw , molars | - grinding and crushing foods. |
| 3. Lawer jaw, incisor | - breaking and biting foods. |
| 4. Upper jaw, premolars | - grinding and crushing food. |
| 5. Lawer jaw, molars | - Grinding and crushing food. |

14. Which of the following is incorrect regarding small intestine in human digestive tract.

- Superior mesenteric artery supply blood to all part of the small intestine.
- Upper mesenteric vein which collect blood from small intestine opens up to hepatic portal vein.
- Intestinal glands are simple tubular glands.
- Small intestine absorb several protein directly.
- Patches of lymphatic tissues are in sub mucosa of small intestine.

15. The figure depicted below shows a respiratory structures in animal kingdom. Which of the following choice regarding the figure is correct?



- Possesses in insects, mites, millipedes.
- Respiratory pigment haemocyanin combines with this respiratory structures.
- 'X' made up of chitin and provided support for the structure.
- Aquatic crustacean used in respiration.
- Atmospheric oxygen transports to body cells as oxyhaemoglobin.

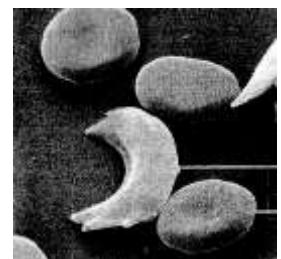
16. Which of the following statements is incorrect regarding regulation of respiratory procen in human.

- Normal respiratory procern is involuntary and sometimes may be voluntary.
- Chemical acceptors which sensitive for partial pressure of CO_2 are on the surface of medulla oblongata.
- stimulate arotic body by reducing partial pressure of CO_2 in blood.
- Stimulates peripheral chemoreceptors by lowering P^H level in blood.
- Some chemical substances which regulate respiratory process response to partial Co_2 pressure in cerebrospinal fluid

17. Vitamins are important for normal functioning of cells. They are important because vitamins.

- act as angry source.
- act as hormone
- important in transmission of impulses directly.
- do not allow changes of pH
- Essential in activity of enzymes.

18. Which of the following statements is incorrect?
1. Maximum water potential is in pure water at standard temperature and pressure.
 2. Transpiration through stomata occur due to differences of water potential.
 3. Water potential in a system is inversely proportional to its solute potential.
 4. Turgor pressure act in every plant cells.
 5. Pressure potential does not take positive value in everytime.
19. Which of the following regarding path ways of water transportation in a plant is correct. ?
1. Water moves through symplast by osmosis
 2. Cell wall of passage cells in a root belong to apoplast.
 3. Materials should be passed through the membranes again and again in the vocabulary path way.
 4. Vessels, lumen of the tracheid's belong to vacuolar path way.
 5. Transportation of water in leaf mesophyll cells occurred only through apoplast route.
20. At phloem translocation.
1. Phloem translocation take place bidirectionally via same phloem sieve tube.
 2. Occur under a positive pressure gradient.
 3. Translocation speed up due to transpirational pull.
 4. ATP need for all the steps of translocation.
 5. Materials translocated are very high but the speed of translocation is low.
21. Which of the following is not occurred at closing of stomata.
1. Erecting thick curved wall in stomatal cell.
 2. Insertion of K^+ to the guard cells by ABA.
 3. Occurring endosmosis from guard cells during in drought conditions.
 4. Lowering sugar concentration in the guard cells
 5. Closing of stomata in some plants during day time.
22. The blood pressure of a person is 120/80 Hg mm. Which of the following regarding this statement is not accepted?
1. Pressure that exert on arteries by blood at the systolic is 120 Hg mm
 2. Differences between these two figures are called pulse rate.
 3. This value in a person is always constant.
 4. The volume of blood removes from the heart at minute is important in keeping these values in a normal range.
 5. These values may be changes due to contraction of artery wall.
23. A person with AB^+ blood group is present which of the following regarding the person is correct.
1. Antigens 'a' and 'b' present in blood plasma of the person.
 2. Rhesus antigens available in the person's blood plasma.
 3. He can transfuse blood for AB^- person.
 4. AB^+ and B^+ children will be produced when this person married a women with B^- blood group.
 5. This person can receive Rh^+ or Rh^- types blood.
24. The cells of a person in blood stream is depicted in the diagram given below. Which of the following is correct regarding the cell chart given.
1. This person suffers in thalassemia.
 2. The blood cells obtain sickle shape due to abnormal haemoglobin.
 3. This abnormality is a characteristic of sex linkage.
 4. This condition can cure by giving B_{12} folic acid to this person.
 5. This abnormality occur due to dominant mutations.



25. Animal which consists of a nerve ring a pair of cerebral ganglia at anterior end and solid lateral nerve cords and eyespot are given. Which of the following represent correct choice regarding its phylum and class.

Animal	phylum	class
1. Brittle star	Echinodermata	Ophiuroidea
2. <i>Fasciola</i>	Platyhelminthes	Trematoda
3. <i>Planaria</i>	platy helminthes	Trematoda
4. Sea cucumber	Echinodermata	Ophiuroidea
5. <i>Planairia</i>	platyhelminthes	Turberlania

26. Which of the following is a function of parasympathetic nervous system.

1. Inhibition of secretion of tear.
2. Dialation of coronary artery.
3. Increasing of secretion of urine from kidney.
4. Stimulation of conversion of glycogen on to Glucose.
5. Relaxation of smooth muscle cells in bladder.

27. Which of the following regarding rhodopsin is correct ?

1. Highly includes in cone cells.
2. It includes only in rod cells and bleach under low light intensities.
3. It need high light intensities for bleaching.
4. It consists both cone and rod cells.
5. It needs vitamin D for synthesizing.

28. Which of the following is incorrect regarding cerebrospinal fluid.

1. Secretes from the choroid flexuses in the brain
2. Contains only in cerebral ventricles and central canal of the spinal cord.
3. The fluid contains very small amount of white blood cells.
4. Contains less amount of Albumin and Globulin
5. This fluid supports in regulation of breathing.

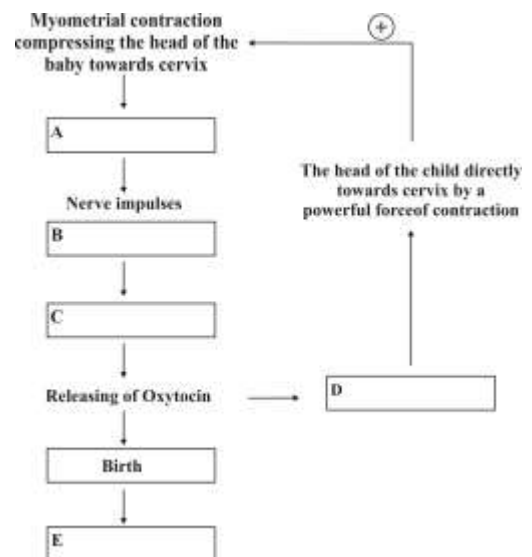
29. Diabetes insipidus occur due to production of inadequate amount of ADH or not responding the kidneys for ADH. Which of the following is not a result of this.

1. Reducing amount and concentration of urea removed with urine.
2. Increasing the amount of water removed with urine.
3. Dilution of urine
4. Occuring high thirsty.
5. Changing the volume of urine passed

30. Flow chart related to the hormones involved in parturition is given below.

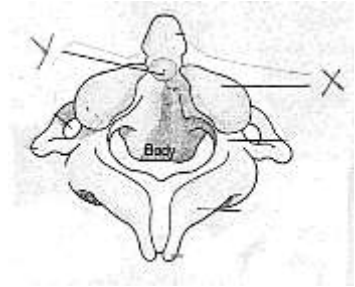
Which of the followings are not matching for A → E

1. (A) – Relaxation receptors of the uterus
2. (B) – Foetus & Hypothalamus of the mother
3. (C) – Anterior pituitary
4. (D) – Smooth muscles in the uterus.
5. (E) – Inhibition of contractions of the uterus.

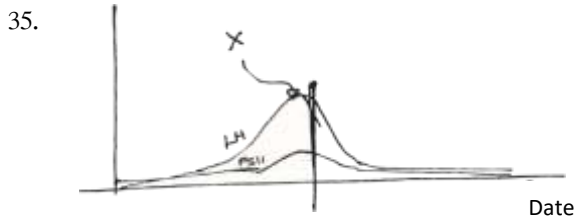


31. Which of the following is unmatched regarding the bone tissue.
1. Bone matrix – Major constituent is calcium phosphate
 2. Haversian system – consist only haversian canals and osteocytes.
 3. Osteoblasts – Build up of bone tissue
 4. Spongy bone – Red bone marrow are present
 5. Osteoclasts – Remove bone matrix

32. Which of the following is not correct regarding the above diagram
1. This is the second cervical vertebrae.
 2. Important in moving the head in side ways.
 3. X is the articulating surfaces for the atlas
 4. Y is the spot where odontoid process emerged
 5. A pair of short transverse processes with vertebrarterial canal.



33. Which of the following is correct regarding sexual reproduction.
1. Two individuals are not needed always.
 2. Parthenogenesis is not a method of sexual reproduction.
 3. Gemma in *Marchantia* is a sexual reproductive structure
 4. In sexual reproduction in fungi, first karyogamy and later plasmogamy occurs.
 5. Gametes are always produced by meiosis in sexual reproduction
34. Which of the following indicates correct sequence of life expectancy of sperm in spermatogenesis and after ejaculating into the vagina.
1. 72 days and 24 hrs
 2. 72 days and 72 hrs
 3. 72 hrs and 48 hrs
 4. 72 days and 48 – 72 hrs
 5. 48 days and 48-72 hrs



Changes in the blood levels of FSH and LH during the menstrual cycle is given in the graph above. Which of the most possible event may occur in the ovary at X situation is?

1. Secretion of GnRH from hypothalamus.
 2. Decreasing concentration of progesterone and oestrogen levels in blood.
 3. Destruction of corpus albicans.
 4. Arriving the graafian follicle to its maximum growth.
 5. Developing graafian follicle secretes progesterone.
36. Indolebutyric acid is a,
1. Naturally synthesized plant growth substance.
 2. Substance that induces occurring roots in stem cuttings.
 3. Artificial growth substance that induces blooming of flowers in plants.
 4. Plant growth substance which induces seed germination.
 5. Plant growth substance which induces ripening of fruits.
37. What is the frequency of persons of AaBbCc genotype in a progeny which is obtained from crossing of two persons with AaBbCc genotype with each other.
1. $\frac{1}{64}$
 2. $\frac{1}{32}$
 3. $\frac{1}{16}$
 4. $\frac{1}{8}$
 5. $\frac{3}{16}$

38. Select the incorrect statement regarding *DNA*
1. Number of purine bases are equal to the number of pyrimidine bases in a *DNA* molecule.
 2. Different sizes of *DNA* molecules can be separated by centrifugation.
 3. Only one strand of *DNA* molecule involve in protein synthesis.
 4. *DNA* is denatured at about $90^{\circ}c$
 5. *DNA* donot absorb visible light but absorb UV light.
39. Following definitions are related with environmental biology. Which of the following are correct.
- a – The amount of light energy converted to chemical energy by unit area within a unit time by the primary producers – Primary production.
 - b – Trophic level is a step of a food chin through which energy of an community is transferred.
 - c – Ecological niche is the location that an organism lives in the ecosystem.
 - d – Extinction is the elimination of members of a species from the earth.
 - e – The areas with a high concentration of endemic species are biodiversity hot sport.
1. a and b only 2. b only 3. a only 4. c and d 5. a,d and e
40. Select the incorrect statement.
1. Tobacco Massaic virus shows helical morphology.
 2. Common culture media can be used for any type of microorganism in culturing .
 3. *Pleurotus* is an edible fungi
 4. Biological poisons may be compounds of protein or lipopolysaccharides.
 5. Expectation of secondary treatment of purification of waste water is decreasing value of BOD.

- **For each of the questions 41 to 50 one or more of the responses is / are correct. Describe which of the response / responses is / are correct and them select the correct numbers.**

- 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 summaries.				
1	2	3	4	5
ABD correct	ACD correct	AB correct	CD correct	Any other response or combination of responses correct.

41. Which of the following/ followings can be occurred when a plant leaf of sugar cane is exposed to the sunlight.
- A. Photo chemical reaction take place in PS II of mesophyll, cells.
 - B. Production of malate in the mesophyll cells.
 - C. Reduction of oxalate in to malate in the bundle sheath cells.
 - D. Transportation of malate and pyruvate through plansmodesmata.
 - E. Production of starch in the chloroplasts in bundle sheath cells and mesophyll cells.
42. In skeletal muscle contraction.
- A. Actin head attaches to myosin binding sites.
 - B. Length of the A band get changed in myofibril
 - C. Length of the I band get shorter, in myofibril
 - D. ATP is necessary of the myosin heads to detach.
 - E. In muscle contraction, myofibril get shorter.

43. Which of the following / followings are evergreen biomes?
 A. Chaparral B. Tropical forest C. Deserts D. Tundra E. Temperate broadleaf forest.
44. Which of the following / followings are correct combination regarding impacts of global environmental problems and contributory factor.
 A. Desertification – Acid rains
 B. Increase of drought conditions – Global warming.
 C. Spread of tropical diseases to temperate areas– Depletion of the ozone layer.
 D. Decrease soil fertility – Acid rains.
 E. Increased risk of skin cancer – Photochemical smog.
45. P - Red flowers $AABB$ \times White flowers $aabb$
 F_1 - Red flowers $AaBb$ \times White flowers $aabb$
 F_2 - $AaBb$ $Aabb$ $aaBb$ $aabb$
- Select the correct statement/s regarding above a cross.
 A. This is a non – mendelian inheritance
 B. Recessive epistasis was in progress
 C. Incomplete dominance was in progress
 D. In F_2 progeny Red flowers to white flowers is 1:3 ratio
 E. Gene linkage
46. Which of the following is not correct regarding DNA probes.
 A. Specially labeled DNA molecules. B. Used to identify other DNA molecules
 C. Used as vectors D. Not used in DNA finger printing
 E. Useful in gene identification.
47. *Thiobacillus ferrooxidans*
 A. Heterotrophic Bacteria B. Used in iron extraction
 C. Convert sulphur in to SO_4^{2-} D. Used for *Cu* extraction
 E. Consist of cellulose in the cell walls.
48. Which of the following is not involve for the bearing of body weight in the lower limb of human.
 A. Large sole B. Large calcaneus C. Tibia present in thigh
 D. Strong knee joint E. Strong Humerus
49. Which of the followings/ followings statements are incorrect regarding the sense organs in human.
 A. Ciliary body and suspensory ligaments are important in accommodation of the eye.
 B. Sacculle is important for keeping position of head and body posture in relative to gravity.
 C. Transmission of sound waves in middle ear take place by a vibrational wave
 D. Pitch of the sound can be separated by the stimulation of sensory cells situated various regions of the basal membrane
 E. The stimulus receive from left ear of a person bring nerve impulses only for right hand cerebral hemisphere.
50. Select the incorrect statements.
 A. *Ophicephalus striatus* in exotic species.
 B. Slender loris (Unah apuluwa) is conserved by CITES.
 C. In orphanages ensure their continued reproduction and survival
 D. Tundra biomes consist of *Pinus* and *Cypresses* which adapt for cold conditions.
 E. Savanna is a grassland with scattered isolated trees.



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Third Term Test - Grade 13 - 2018

Index No :

Biology II

Three Hours Only

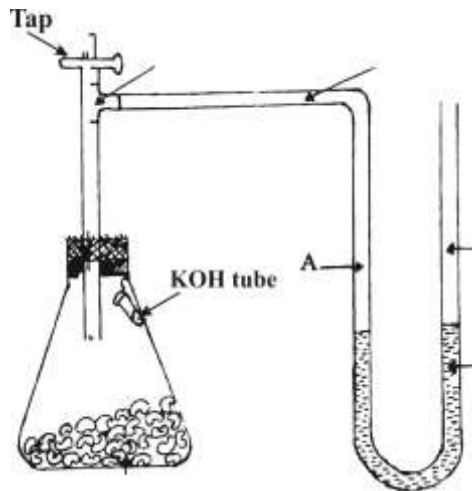
Impotent

Part A - Structured Essay. Answer all questions on the paper itself.

Part B - Essay, Answer four questions only. Give clearly labled diagrams where necessary.

Part A (Structured Essay)

01). A). The diagram below shows an equipment used in the biology laboratory.



- i. a) What is this equipment.
.....
- b) Which purpose is this instrument used for?
.....
- ii. Suppose that germinating green gram seeds are used as this instrument is arranged. Here green gram seeds are soaked in water for about 8 hours.
 - a) What is the reason for soaking green gram seeds in water for 8 hours. ?
.....
 - b) Write two chemical changes occurred in green gram seeds soaked in water.
.....
.....

- iii. a) What are the functions of tube with KOH and the tap in the apparatus given above ,
 Tube with KOH -

 The tap -

- b) State the principle that is used for measuring the rate of respiration of germinating seed by using the above apparatus.

iv. Define respiratory quotient.

v. State the value of respiratory quotient of germinating green gram seeds and state the reasons for your answer.
 Respiratory quotient
 Reasons

- B). i. Some respiratory structures in animal kingdoms are given below.
- a. Cloacal respiratory trees
 - b. Book lungs
 - c. External gills
 - d. Trachea
 - e. Lungs

Answer the following questions regarding the structures given below.

- (a) Name an animal which possess cloacal respiratory tree.

- (b) Which of the structure among these that carries O_2 directly to the tissues without respiratory pigments.

- (c) Name an animal group that consists lungs with air cavities.

- (d) Name a vertebrate which possess external gills.

- (e) Write two external characteristics of group which belong animals with book lungs and their respiratory structures.

ii. (a) State the structure in human respiratory system which made only of cartilage

.....

(b) What types of cartilage dose it contain?.

.....

.....

iii. Write two non-related functions of respiration of the structure stated (b) above and the structure important for this.

Functions

Structure

1)

.....

2)

.....

iv. (a) The structure in respiratory system of a person in human population is got swollen at their sexual maturity. What is the structure that get swollen?

.....

(b) What is the result of the event stated in (a) above.

.....

v. a) A person who worked in granite quarry causes pulmonary hypertension and heart failure states reasons for this phenomena.

.....

.....

.....

.....

C). Answer the questions regarding some description on structures found in living cells.

i. (a) Made up of protein only, hollow and giving support for the cell.

.....

(b) Made of protein and lipids. Possesses receptor protein.

.....

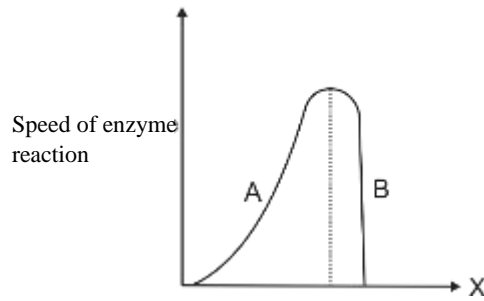
(c) Contains enzymes important in hydrolysis of protein and lipids.

.....

(d) Synthesize of phospholipids for cell membranes.

.....

ii. The following graph shows effect of changing of a variable on changing of a speed of an enzyme reaction.



(a) What is the variable of axis 'X'.

.....

(b) How does the speed of enzyme reaction change at the region of A?

.....

(c) What is the reason for reducing speed of reaction at 'B'?

.....

iii. Starch digestion starts in the mouth of a person. But it does not occur in the stomach. What is the reason for this?

.....

02). A). i. What are the main processes conducted by the human digestive tract.

.....

ii. (a) Name an animal in kingdom Animalia with highly branched incomplete digestive tract.

.....

(b) Name an animal group in kingdom Animalia without an alimentary canal

.....

iii. (a) In which region of human digestive tract is broad.

.....

(b) Name two variations in wall of the structure you stated III(a) above and state the functions for each of the structures.

Variation

Functions

.....

iv. What is the gland in digestive tract which carry out both endocrine and exocrine function?

.....

v. How the exocrine part of the gland you identified (iv) above is built up.

.....

B). i. Name hypothesis that put forward to describe ascent of sap and phloem translocation occurred in a higher plant.

ascent of sap

phloem translocation

ii. Define sink regarding phloem translocation occur in a higher plant and give an example.

sink

example

iii. State the three principles that important for describing ascent of sap occurred in tall plant.

.....

iv. Name separately a growth factor which translocate through xylem and phloem, and state the places where they produced.

Growth factor

Places produced

a) Phloem

b) Xylem

v. How does epidermal hairs affect on ascent of sap which occurred in a tall plant.

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

C). i. What are the changes of aortic arches of mammalian circulatory plan regarding the aortic arches in general vertebral circulatory plan.

General plan	Mammalian Plan
1. 1 st pair of aortic arches
2. 4 th pair of aortic arches
3. 6 th pair of aortic arches

ii. (a) Define systolic pressure.
.....
(b) State the value of it in a normal healthy adult.
.....

iii. Name two structural characteristic seen through naked eye of longitudinal section of human kidney.
.....
.....

iv. State a microscopic structural characteristic of longitudinal section of the human kidney.
.....

v. What is the most permeable blood capillary among blood capillaries associated in human nephron.
.....

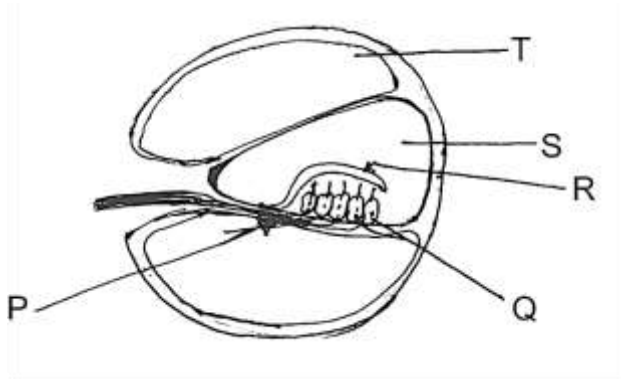
03). A). i. What is a receptor?

.....
.....

ii. State two physiological characteristics of receptors.
.....
.....
.....

iii. State four specific receptors in human skin to perceive various stimuli.
.....
.....
.....
.....

iv. The diagram given below represent a part of a certain sensory organ.



(a) Identify the diagram given, above.

.....

(b) What type of receptor is in the structure given?

.....

(c) What type of stimulus does it sensitive?

.....

(d) Name the structures labelled as p, q, r, s, and t.

P

Q

R

S

T

(e) What is the name given for combination of P,Q,R structures?

.....

v. (a) What is the overall function of (e)

.....

(b) To which location that supply nerve impulses from the sensory nerve started from here.

.....

B). i. Name a phylum which consist skeleton formed by plates of calcium carbonate.

.....

.....

ii. How does the skeleton provide support for the body?

.....

.....

iii. Write a physiological difference of muscles which are connected to the skeleton from other muscles.

.....

iv. Name the components present in following structures of sarcomere.

A Band

I Band

H Zone

v. Name two instances where muscle contraction is important in regulation of body temperature.

.....

.....

C). i. (a) Define a pathogen?

.....

.....

(b) Virulence is an intrinsic property of a pathogen. What are the main reasons that responsible for virulence?

.....

.....

ii. Skin act as a physical barrier for pathogens. How does it occur?

.....

.....

iii. (a) A pathogenic microorganism enters to the body of the person with a spoiled food, and cause a disease. How does it define?

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(b) Name a pathogen which cause a disease for a person as given above and its vector.

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iv. Write the chemical change that take place in spoiling of proteinous food.

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v. Fishes are a type of protein rich food. Write 2 methods of preservation of fish and their principles.

Method

Principle

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04). i. (a) Define vegetative reproduction?

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(b) Write the method of vegetative propagation for the following plants.

- *Cyperus*
- *Begonia*
- *Cucurma*
- *Crinum*

ii. Define plant tissue culture.

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iii. What are the inorganic compounds present in the culture media of plant tissue culture?

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iv. Micro propagation is a usage of plant tissue culture. Write the steps of it in order.

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B). i. Name three major biotic components of an ecosystem.

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ii. Define the following terms.

- a) Primary Productivity
- b) Ecological pyramids

iii. (a) Define air pollution.

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(b) Write 3 global environmental problems with related to the air pollution.

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iv. Write 2 internationally important protocols which use for solving problems related to atmosphere.

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v. (a) Define extinction of species.

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(b) Name an invasive animal species in Sri Lanka which affect on extinction of species.

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vi. Define Bio diversity hotspots.

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C). i. Write 2 importances of in reproduction for living organism.

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.....

ii. Write a disadvantage of asexual reproduction.

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iii. (a) Write the hormone which used as an indicator of pregnancy.

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(b) Write the locations that the above hormone is secreted.

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(c) In which functions of hormone is similar to the function of hormone you mentioned above.

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iv. Answer following questions related to a new born body.

(a) What is the duration that the baby should feed only by breast milk?

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(b) What is the duration that the baby should feed with solid food and breast milk.

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(c) Write 2 important factors of giving breast milk.

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v. (a) What is the chemical factor that is not involve for the production of milk from mammary glands of a normal women.

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(b) What is the chemical factor that is not involve to the production of milk from mammary glands in pregnant woman.

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(c) Name the hormone which stimulate to release of milk from mammary glands.

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Third Term Test – 2018
Biology – Grade 13 Part II
Part B (Essay)

❖ **Answer four questions only**

- 05). i. Describe the structure of DNA and explain replication of DNA.
ii. Describe the way of producing an important protein in medical sciences using recombinant DNA technology.
- 06). Prepare a report on uses of gene technology for betterment of man kind.
- 07). i. Define alternation of generation.
ii. Explain the following events occurred in life cycle of *cycas*.
a. sporophyte
b. gametophyte
c. pollination and fertilization
iii. Plants in anthophyta are more adapted for living in terrestrial environment than that of cycadophyta. Explain.
- 08). i. Describe organization of autonomous nervous system of human.
ii. Explain mechanism of transmission of a nerve impulse through vertebrate nerve fiber.
- 09). i. Define respiratory cycle.
ii. Describe types of epithelial tissues in various regions of respiratory tract and discuss how they adapt for carrying out function, in each of these regions.
- 10). Write short notes on.
i. Pituitary hormone.
ii. Bio diversity conservation
iii. Movements of plants