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Final Examination - Grade 13 - 2016

Index No

Biology I

Two - Hours

Important:

Answer All Questions

- 01. What is the Complementary base sequence of a DNA Strand having AAGCCTGTT bases.
1. GGCAAGCUU 3. TTCGGACAA 5. CCAAAGCAA
2. TTCGGUGAA 4. GGCAAGCAA
02. Select incorrect statement regarding smooth endoplasmic reticulum
1. Presence of membrane bounded enzymes.
2. Synthesis phospholipids and glycolipids in cell membrane.
3. Network of tubular sacs
4. Involve in detoxification
5. Store Ca+2
03. Select incorrect statement regarding anchor junctions
1. Connect the plasma membranes of adjacent cells tightly.
2. Allow signal and material exchange between adjacent cells through direct connections.
3. Prevent leakages through inter cellular space
4. Presence in skin epithelium
5. Mechanically attach the cyto skeleton of adjoining cells for strong binding.
04. Select incorrect statement regarding ATP
1. Hydrolysis of ATP -> ADP releases 30.6KJmol-1 energy
2. ATP is a mobile molecule
3. Composed with nucleotide
4. When muscle contracts with the usage of ATP the length of A bands change
5. ATP is considered as energy exchange unit
05. Components of chlorophyll molecule
1. C, H, O, N, Mg 4. C, H, O, S, Mg
2. C, H, O, N, Fe 5. C, H, O, Mg, Fe
3. C, H, O, N, S

06. Which one of the following shows respiratory structures organs in vertebrates.
1. Body surface, Gills, Book lungs
 2. Lungs, Gills, Body Surface
 3. No membrane bounded organelles
 4. Book Lungs, Body Surface, Trachea
 5. Body surface, Trachea, Gills
07. Domain Archaea differ from Eucariya, because archae,
1. Absence of peptidoglycan as cell wall component.
 2. Not sensitive to antibiotics
 3. No membrane bounded organelles.
 4. Presence of Several Kinds of RNA polymerase enzymes
 5. Protein synthesis begins with methionine
08. Storage food in Rhodophyta is,
1. starch
 2. Glycogen
 3. Chrysolaminarin
 4. Laminaria
 5. Floridian starch
09. Which of the following is not found in phylum Echinodermata?
1. Absence segmentation
 2. Body surface with spines or pedicellaria
 3. Presence endo skeleton
 4. presence bisexual organisms
 5. Gonads with ducts
10. A - Chondrichthyes
 B. - Amphibia
 C - Reptilia
 D - Aves
 E - Mammalia
- Which of the above classes release urea as main excretory product?
1. A, B, E
 2. A, B, C
 3. C, D, E
 4. B, D, E
 5. All of them
11. First stable product in C₄ plant is
1. PGA
 2. OAA
 3. PGAL
 4. RUBP
 5. Glucose
12. Chitin is
1. Polysaccharide
 2. Derivative of poly saccharides
 3. Lipid
 4. Lipoprotein
 5. Protein

13. One of the main symptoms in silicosis condition
1. Loss of action of cilia in respiratory system
 2. Decrease oxy - hemoglobin
 3. Destroy blood capillaries and bronchioles
 4. proliferation of cells in the bronchial epithelium
 5. Constriction of peripheral blood vessels
14. The vitamin that related with Scurvy disease
- | | | |
|--------------|---------------------------|---------------------------|
| 1. Vitamin A | 2. Vitamin B ₁ | 3. Vitamin B ₃ |
| 4. Vitamin C | 5. Vitamin D | |
15. The factor which least affect on hypertension
- | | | |
|------------------|----------------------------------|-------------|
| 1. Smoking | 2. Higher consumption of alcohol | |
| 3. Less exercise | 4. High obesity | 5. Diabetes |
16. Function of enterogasteron is human digestive system
1. Reduces stomach mobility and releasing food from stomach
 2. Stimulates secretion of gastric juice
 3. Increase stomach mobility
 4. Stimulates secretion of pancreatic juice
 5. Stimulates secretion of bile from liver
17. Which one of the following statement regrading phloem translocation is incorrect
1. Transport take place in both directions
 2. It is an active process
 3. Companion cells derived from sieve tube elements
 4. Tissue from which translocation begin is called the source and the tissue of destination is called the sink
 5. It occur along mass flow
18. Select incorrect statement regarding connective tissue,
- | | |
|------------------------------|-------------------------------|
| 1. Has large matrix | 2. Storage |
| 3. Involve in transportation | 4. Connect Organs and tissues |
| 5. Origin from endoderm | |
19. Not Occur during mitosis
1. Disappear nuclear membrane
 2. Pairing homologous chromosomes
 3. Alignment of chromosomes the center of the cell
 4. Seperate chromosomes in to chromatids
 5. Posses genetically identical daughter nucleus

20. A, B and C are some circulatory systems in organisms

- A - Opened circulatory System
- B - Closed single circulatory system
- C - Closed double circulatory system

In which one of the following animals are arranged in correct sequence showing above A, B, C circulatory systems

- 1. Cockroach, Earthworm, Deer
- 2. Spider, Octopus, Deer
- 3. Crab, Earthworm, Nereis
- 4. Oysters, Shark, Earthworm
- 5. Sea urchin, Earthworm, Snail

21. Select incorrect statement regarding nervous co ordination and chemical co ordination in animals.

	Nervous Co - ordination	Chemical co -ordination
01	Occur speedly	Occur slowly
02	Response distribute over a certain range	Response localized
03	Electrical transmission	Chemical transmission
04	Transport through nurones	Transport through blood
05	Occur with short time	Occur with long period

22. When osmotic pressure increases in blood, which of following should not occur in a person,

- 1. Increasing permeability to water in collecting ducts
- 2. Increasing thirsty
- 3. Producing diluted urine
- 4. Releasing ADH from Pituitary gland
- 5. Stimulating pituitary gland with osmo receptors in hypothalamus

23. Select incorrect statement regarding neurons

- 1. No centrioles in neurons
- 2. No nucleus in dendrites
- 3. No Nissal granules in axons
- 4. Noradrenaline is a neurotransmitter in parasympathetic nervous system
- 5. Every myelinated neuron has node of ranvier

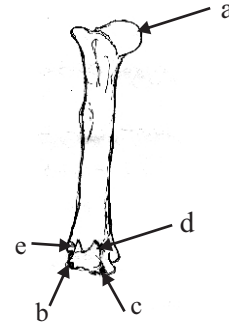
24. Hormones that react oppositely to maintain homeostasis

- 1. Thyroxine and parathromon - Balance Calcium
- 2. Insulin and glucogen - Metabolism of glucose
- 3. Progesterone and oestrogen - Sexual differentiation
- 4. Oxytocin and Prolactin - Producing milk

25. Which of the following is incorrect regarding uric acid
1. Less toxicity is the main advantage
 2. No need of water for excretion
 3. Crystals may form
 4. Low carbon loss
 5. Can be stored in the body
26. Not a function of human nephron
1. Actively reabsorb all glucose and amino acids in proximal convoluted tubule
 2. Actively reabsorb Na^+ , in ascending limb of loop of Henle
 3. Passively reabsorb water, in collecting duct in the presence of ADH
 4. Vitamin B and drugs secrete in to tubules
 5. Passively reabsorb Na^+ in distal convoluted tubule
27. Which of the following is correct regarding hormones on the functions of kidneys.
1. The hormone ADH, produced by posterior pituitary affect on proximal convoluted tubule and collecting ducts.
 2. Hypotonic urine produced in the presences of ADH
 3. Reabsorbing amount of Na^+ and water is increased by Aldesteron
 4. When mineral concentration Increases in blood, aldesteron secretion also increases.
 5. Erythropoietin affect absorption of Na^+ , by nephrops
28. Which of the following combinations is incorrect regarding excretory organ - organism
1. Antenna glands - Lobsters
 2. Contractile Vacuoles - Amoeba
 3. Body Surface - Earth Worm
 4. Flame cells - Planaria
 5. Nephridia - Leech
29. Human excretory system
1. It is located in side the andominal cavity, either side of vertebral column and behind the peritoneum
 2. Right kidney lies slightly above the left
 3. The Kidneys receive oxygenated blood from renal artery and celiac artery
 4. Kidneys externally surrounded by yellow fibrous connective tissue
 5. Bowman's capsule of juxtamedullary nephrones located in periphery of the cortex
30. Which is correct regarding skeletons
1. Longitudinal and circular muscles which are connected to exoskeleton, involve in contraction and relaxation of movements of soft bodied animals
 2. Arthropod exoskeleton made of chitin
 3. Some annelids and polychaete who dwelled in tubes have hydrostatic skeletons.
 4. Turtles and tortoises have exoskeleton with bony plates
 5. Bearing an endoskeleton is a characteristic feature of protostomia
31. Not a paired bone in human skull
1. Vomer bone
 2. Ethmoid bone
 3. Frontal bone
 4. Sphenoid bone
 5. Parietal bone

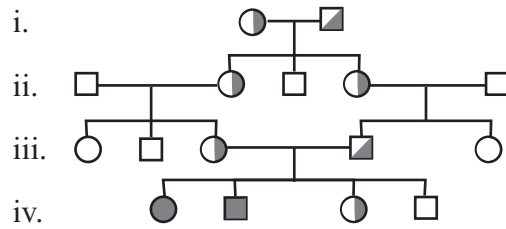
32. Not a common feature in thoracic vertebrate
1. Elongated, flat, axe shaped spinous process
 2. Two sides of the transverses process contains articular face to articulate ribs
 3. Spinous process extends downwards
 4. Vertebra Body is triangular
 5. vertebra body consists articular surface for ribs

33 - 35 Question based on the following diagram



33. Which bone is denoted by above diagram
1. Dorsal view of right humerus
 2. Ventral view of right humerus
 3. Ventral view of left humerus
 4. Dorsal view of left humerus
 5. Ventral view of right femur
34. Identify "b" and select correct statement regarding "b"
1. It is head, articulate with radius head
 2. It is head, articulate with olecranon process in ulna
 3. It is pulley, articulate with radius head
 4. It is pulley articulate with olecranon process in ulna
 5. It is pulley articulate with coronid process in ulna
35. Which of the following is incorrect regarding above diagram
1. 'a' make ball and socket joint with glenoid fossa in scapular
 2. 'd' provide space to olecranon process in ulna
 3. Distal end has two epiarticular process as partial and mid process
 4. This is one of the largest and strongest bones in human
 5. One end of the triceps muscle start from this bone
36. Select correct statement regarding human reproduction
1. A Sperm can fertilize an egg as soon as spermatogenesis
 2. Only one sperm can reach to the ovum
 3. Vaginal acidity increase the motility of sperm
 4. Acrosomal enzyme use to penetrate corona radiata
 5. Sperm head and mid piece enters into the cytoplasm of egg
37. Not a function of auxin,
1. Elongation of cells
 2. Maintenance of apical dominance
 3. Regulating tropic movements
 4. Induction of leaf abscission
 5. Induction of cambial activity
38. Consider below plant propagation methods. Select unmatching example out of them
1. Runners - *Cyperus*
 2. Tubers - *Solanum*
 3. Bulbils - *Dioscoria*
 4. Bulb - *Annanas*
 5. Corm - *Gladiolus*

39. Below pedigree chart show a disease that inheriting in human



* Select incorrect statement regarding pedigree chart

1. Second generation has healthy and deceased children
2. Disease absent in third generation
3. No disease after fourth generation
4. Marriage between blood relative cause to make diseased children in fourth generation
5. Couple in the first generation has not affected by the disease

40. Select correct statement regarding children whose father's blood group is O and mother's blood group is A

1. All the children belong to blood group O
2. Children belong to blood group O and A
3. 100% of the children are in blood group A
4. Cannot decide about children's blood group because no evidence about mother's condition as homozygous or heterozygous
5. Only heterozygous children

41. For the each of the questions 40 - 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, B are correct..... 3
 If only C and D are correct..... 4
 If any other response or responses correct..... 5

41. Which of the following is / are product / products of light reaction in, photosynthesis?

- A. ATP B. O₂ C. CO₂
 D. Starch E. NADP

42. Which of the following is / are polymer / polymers?

- A. Myosin B. Sucrose C. Amylase
 D. Pectin E. Ribose

43. Which of the following is /are correct regarding skeletal muscles?

- A. Long, Cylindrical, Unbranched B. Uninucleated
 C. Presence Sarcomere D. Neurogenic
 E. Fatigue easily

44. Select correct statement / statements regarding opening of stomata
- Amount of CO_2 increase in intercellular space
 - Amount of Absciscic acid increase in mesophyll
 - Increase malate concentration in guard cells
 - Decrease water potential in guard cells
 - Increase amount of starch in guard cells
45. Which of the following character / characters common to both Reptilia and aves in phylum chordata?
- Presence pentadactyl limbs
 - Presence only inner ear and middle ear
 - Ovoviviparity
 - Presence 12 pairs of cranial nerves
 - Cold blooded
46. Incorrect statement / statements regarding cochlea in human ear
- It is a cavity filled with fluid in temporal bone in the skull.
 - Internal cavity totally filled with perilymph in bony labyrinth
 - Sensory cells embedded in basilar membrane
 - It has Corti's organ
 - Maintain body balance and hearing sound
47. Method / Methods of totally removing micro - organisms from a substrate
- Wet heat
 - Dry heat
 - Boiling in water
 - Adding acids
 - Using high energy rays
48. Fungus / Fungi used as human food,
- Agaricus
 - Rhizopus
 - Lentinus
 - Pleurotus
 - Aspergillus
49. Which of the following statement / statements is / are incorrect regarding air pollutants
- Carbon dioxide - Global warming
 - Sulphur dioxide - Acid rain
 - Carbon monoxide - Affect photosynthesis
 - Carbon particles - Respiratory disorders in animals
 - Oxides of Nitrogen - Acid rain
50. Which organism / organisms in nitrogen cycle can convert carbon dioxide into carbohydrate
- Anabaena
 - Nitrosomonas
 - Pseudomonas
 - Nitrococcus
 - Nostoc