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Gandhinagar**



STD. 12 (Science)
English Medium

Question Bank-2008

Subject : Biology

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BIOLOGY (056)

SECTION - A

* Questions 1 to 16 are multiple choice questions carrying one mark each. Choose correct choice from (a) (b) (c) and (d) and write Answer.

- (1) In Thistle funnel experiment what will happen if pressure is applied to solution from upper part of funnel.
(A) Water will rise (B) Water will come down
(C) Thistle funnel will break (D) Entry of water stops
- (2) What will happen if a cell in which exosmosis has taken place is kept in hypertonic solution
(A) Plasmolysis (B) Deplasmolysis
(C) Turgor Pressure (D) None of these
- (3) Which membrane is Hen's egg membrane ?
(A) Permeable membrane (B) Semi permeable membrane
(C) Selective permeable membrane (D) Impermeable membrane
- (4) The collective turgor pressure of all cortical cell is called
(A) Diffusion (B) Osmotic pressure
(C) Root pressure (D) Absorptive Pressure
- (5) What is positive value of ψ_p in Plant Cells.
(A) Osmotic Pressure (B) Root pressure
(C) Imbibition (D) Turgor pressure
- (6) In mechanism of opening & closing of stomata which ions enter
(A) H^+ and Mg^{+2} (B) K^+ and Cl^-
(C) K^+ and Fe^{+3} (D) Malate ion and Mg^{+2}
- (7) What is function of Parchment Paper as membrane.
(A) Impermeable Membrane (B) Permeable membrane
(C) Semi permeable membrane (D) Selective permeable membrane
- (8) In Pure water if solute is added, what will be its effect on water potential.
(A) It become Negative (B) It becomes Positive
(C) It becomes more positive (D) It becomes more positive.
- (9) What is maximum Root pressure noted.
(A) 2 Atmospheric pressure (B) 4 Atmospheric pressure
(C) 100 Atmospheric pressure (D) 12 Atmospheric pressure
- (10) Due to deficiency of which mineral tender leaves change colour yellow to white.
(A) Sulphur (B) Phosphorus
(C) Magnesium (D) Nitrogen

- (11) Which mineral is essential for synthesis of O_2
 (A) Cu^{+2} (B) MO
 (C) Cl^- (D) Zn^{+2}
- (12) Which mineral is essential for activity of enzyme carboxylose
 (A) CO (B) Mn^{+2}
 (C) Zn^{+2} (D) Ca^{+2}
- (13) For synthesis of IAA which mineral is required.
 (A) Iron (B) Zinc
 (C) Magnesium (D) Phosphorus
- (14) For conduction of minerals what is necessary
 (A) Transpiration (B) Turgor pressure
 (C) Root pressure (D) None of above
- (15) Name mineral which is required for synthesis of chlorophyll
 (A) Boron (B) Manganese
 (C) Copper (D) Iron
- (16) Mineral necessary for translocation of sugars
 (A) Boron (B) Potassium
 (C) Zinc (D) Molybdenum
- (17) which mineral is found in more quantity in plants
 (A) Manganese (B) Carbon
 (C) Iron (D) Nitrogen
- (18) Due to deficiency of which mineral size of fruits decrease
 (A) K (B) N
 (C) BO (D) Na
- (19) Name mineral which is required for synthesis of middle lamella.
 (A) K (B) P
 (C) Ca (D) Mg
- (20) Which of following collectively forms Trace elements
 (A) C, Cu, Ca, Co (B) N, Mg, Fe, Zn.
 (C) Co, Ni, Na, Zn (D) Mn, Fe, B, P
- (21) In Kranz Anatomy which cells do not show grana organization in chloroplast.
 (A) Xylem Cell (B) Cells of leaf
 (C) Mesophyll Cells (D) Bundle Sheath Cells
- (22) In Photosynthesis from which of following oxygen is released
 (A) H_2O (B) Glucose
 (C) CO_2 (D) None of above

- (23) During photorespiration what is produce in Peroxisome
 (A) Phosphoglycolate (B) Glycoxylate
 (C) Glycolate (D) Phosphoglycerate
- (24) In Noncyclic Photophosphorylation which one does not occur.
 (A) Production of O_2 (B) Decomposition of Water
 (C) Reduction of NADP (D) None of above
- (25) Which of following initiates Photorespiration
 (A) More O_2 (B) Less O_2
 (A) More CO_2 (B) Less CO_2
- (26) Which is first carrier of CO_2 in C_3 Path
 (A) Glycolate (B) RUBP
 (C) PGA (D) PGAL
- (27) How many ATP are used at end of Biosynthetic phase when 1 molecule of Glucose is formed.
 (A) 7 ATP (B) 10 ATP
 (C) 12 ATP (D) 14 ATP
- (28) What is necessary for compensation point ?
 (A) More light and more CO_2 concentration
 (B) More light and less CO_2 concentration
 (C) Sufficient light and more CO_2 concentration
 (D) Sufficient light and low CO_2 concentration
- (29) Which enzyme is produced when Pyruvic acid enters Mitochondria
 (A) Decarboxylase (B) Dehydrogenase
 (C) Dephosphorylase (D) Co-factor
- (30) What is produced when Acetaldehyde reacts
 (A) Methane (B) Ethyl Alcohol
 (C) Lactic Acid (D) Pyruvic Acid
- (31) State number of ATP formed in Dephosphorylation in process of Glycolysis
 (A) 2 ATP (B) 4 ATP
 (C) 3 ATP (D) 6 ATP
- (32) What is function of cytochrome ?
 (A) Growth (B) Oxidation of Glucose
 (C) Production of Energy (D) Electron carrier
- (33) Calculate RQ : $2 CH_4 + 6O_2 + 5 O_2 > 8 CO_2 + 6H_2O$
 (A) 1:3 (B) 1.66
 (C) 0.625 (D) 1.6

- (34) From where do we get starch ?
 (A) Fish (B) Maize
 (C) Butter (D) Egg
- (35) Which vitamin is responsible for synthesis of Rhodopsin
 (A) Vitamin B (B) Vitamin C
 (C) Vitamin D (D) Vitamin A
- (36) Which Animal shows intracellular and extracellular digestion ?
 (A) Planaria (B) Spider
 (C) House fly (D) Earthworm
- (37) It is saprozoic animal
 (A) Tortoise (B) Leech
 (C) Cockroach (D) Spider
- (38) Which vitamin is found in Guava ?
 (A) A (B) B
 (C) C (D) None of above
- (39) State number of required Amino acids in Nutrition of children
 (A) 20 (B) 10
 (C) 22 (D) 8
- (40) Name disease caused due to deficiency of Retinol
 (A) Beriberi (B) Night Blindness
 (C) Pellagra (D) Scurvy
- (41) Due to deficiency of which mineral Anaemia occurs
 (A) Sulphur (B) Iodine
 (C) Iron (D) Calcium
- (42) Which animals have more amount of enzyme
 (A) Carnivorous (B) Omnivorous
 (C) Herbivorous (D) Vegetarian
- (43) From which of following a healthy man of 30 years cannot digest
 (A) Starch (B) Caseinogen
 (C) DNA (D) Fructose
- (44) What type of arrangement of Human teeth is ?
 (A) Isodont (B) Pointed
 (C) Heterodont (D) None
- (45) Ileum absorption occurs by which of following
 (A) Villi (B) Muscular wall
 (C) Serosa (D) Intestinal Juice

- (46) Process for digestion of Fat
 (A) Saponification (B) Emulsification
 (C) Absorption (D) Chemical digestion
- (47) Which juice produce Enterokinase
 (A) Salivary Juice (B) Intestinal Juice
 (C) Bile Juice (D) Pancreatic Juice
- (48) Which Respiratory disease causes cancer
 (A) Pneumonia (B) Lung Cancer
 (C) Emphysema (D) Bronchitis
- (49) From which of following is not present in sweat produced from sweat gland ?
 (A) NaCl (B) Urea
 (C) Glucose (D) Ammonia
- (50) Terminal branches of Bronchioles end in _____
 (A) Bronchi (B) Alveoli
 (C) Bronchiole (D) Bronchitis
- (51) Which of following animal breathes through skin
 (A) Cockroach (B) Planaria
 (C) Earthworm (D) Tortoise
- (52) In body of cockroach what type of Respiratory system is organised.
 (A) Tracheal tubes (B) Trachea
 (C) Peritreme (D) Spiracles
- (53) Where is Mitral valve located
 (A) Truncus arteriosus (B) Aortic artery
 (C) Inbetween left Auricle and left ventricle
 (D) In between Right Auricle and right Ventricle
- (54) In 2 ml. Blood state the number of Blood cells
 (A) 5 to 7 thousand (B) 4 to 6 thousand
 (C) 2-5 to 4 lakhs (D) 2 to 4.5 lakhs
- (55) Which is silent killer
 (A) Artherosclerosis (B) Hypertension
 (C) Hardening of Arterial wall (D) Emphysema
- (56) In ventricle after each systole, diastole repeats in how much time
 (A) 0.40 seconds (B) 0.70 seconds
 (C) 0.55 seconds (D) 0.45 seconds
- (57) To maintain Blood pH 7.4 what is responsible ?
 (A) HHbO_2 (B) KHCO_3
 (C) NaHCO_3 (D) None

- (58) In which layer there is difference in Artery and Vein
 (A) Internal (B) Middle
 (C) External (D) None
- (59) Which tube comes out of kidney ?
 (A) Renal artery (B) Renal vein
 (C) Ureter (D) B and C both
- (60) What is Ketoneuria
 (A) Less amount of urea in urine
 (B) More amount of Ketone in urine
 (C) More amount of creatin in urine
 (D) More Ketone and urea in urine
- (61) Name Nucleated cell of Blood which produce Serum globulin
 (A) Basophil (B) Neutrophil
 (C) Lymphocyte (D) Thrombocyte
- (62) Which process is effected in urine formation first when Blood pressure is reduced
 (A) Osmoregulation (B) Urine Secretion
 (C) Pressure filtration (D) Reabsorption
- (63) When is creatinine produced
 (A) Pressure filtration (B) Reabsorption
 (C) Tubular Secretion (D) A and C
- (64) In Bony fishes what type of Excretion is found
 (A) Excretion of Ammonia (B) Excretion of Urea
 (C) Excretion of Uric acid (D) a and b both
- (65) Which disease is caused if ADH Secretion increases
 (A) Diabetes (B) Goitre
 (C) Critinism (D) Myxodema
- (66) Does not excrete uric acid
 (A) Insects (B) Birds
 (C) Dalmation dog (D) Crocodile
- (67) Nephridia is seen in which Animal
 (A) Tapeworm (B) Cockroach
 (B) Planaria (D) Earthworm
- (68) Structure of Bones forming Ankle are called
 (A) Tarsals (B) Metatarsals
 (C) Metacarpals (D) Carpals

- (69) Protein in I-band
 (A) Actin (B) Myoglobin
 (C) Myosin (D) Globular
- (70) Bone forming floor of Buccal cavity
 (A) Hyoid (B) Sternum
 (C) Clavicle (D) Scapula
- (71) Between two H-bands which protein is found
 (A) Actin (B) Myosin
 (C) a and b both (D) Globular
- (72) In Blood what type of movement is seen in Lymphocytes
 (A) Amoeboid (B) Muscular
 (C) Regular (D) None
- (73) What protects kidney partially
 (A) Vertebral column (B) Pelvic girdle
 (C) Ribs (D) Bones of Hind limb
- (74) In which diseases related to Bones there is inflammation on synovial joints.
 (A) Gouty Arthritis (B) Rheumatoid Arthritis
 (C) Osteo Arthritis (D) Osteoporosis
- (75) In muscle contraction _____ acts as enzyme ATPase
 (A) Myosin (B) Actin
 (C) Hensen's line (D) Krause band
- (76) Which Band is not seen on complete contraction of muscle
 (A) Z (B) H
 (C) I (D) A
- (77) Controls light entering from outside into eye
 (A) Lens (B) Pupil
 (C) Iris (D) Humor
- (78) What are otoliths made of
 (A) CaCO_3 (B) Na_2CO_3
 (C) NaHCO_3 (D) KHCO_3
- (79) Uppermost part of Brain stem
 (A) Pons (B) Midbrain
 (C) Thalamus (D) Iris
- (80) Which is not a part of structure of Brain stem
 (A) Cerebellum (B) Pons
 (C) Medulla Oblongata (D) Mid Brain

- (81) Which part absorbs stray light
 (A) Sclera (B) Choroid
 (C) Retina (D) Iris
- (82) Which of following converts short time memory into a long time remembrance
 (A) Medulla Oblongata (B) Vertebral column
 (C) Pons (D) Hippocampus
- (83) Where is olfactory centres found
 (A) Frontal lobe (B) Parietal lobe
 (C) Temporal lobe (D) Occipital lobe
- (84) Location of taste bud of bitter taste on tongue
 (A) Slightly behind (B) Posterior region
 (C) Tip region (D) Lateral sides
- (85) Cortisol Hormone -
 (A) Increases pain in Joint
 (B) Glucose formation from Amino acid occurs in liver.
 (C) Amino acid formation from Glucose occurs in liver
 (D) Hydrolysis of Lipid
- (86) Which hormone reduces calcium in blood
 (A) Melatonin (B) Parathormone
 (C) Calcitonin (D) Thyroxine
- (87) What excites Heart
 (A) Non adrenaline (B) Adrenaline
 (C) Acetocholine (D) Aldosterone
- (88) In older age which gland reduces and becomes fatty
 (A) Pituitary (B) Hypothalamus
 (C) Pancreases (D) Thymus
- (89) Which hormone increases sugar in blood
 (A) Glucagon (B) Cortisol
 (C) Andrenalin (D) All of above
- (90) What will happen if deficiency of Vassopressin occurs
 (A) Hydrolysis (B) Dehydration
 (C) Water increases in Blood (D) Permeability of collecting tubule increases
- (91) Which of following excites nerves of Hypothalamus
 (A) Vitamin (B) Chemicals
 (C) Enzyme (D) Hormones

- (92) Glucose is formed from Amino acid
 (A) Stomach (B) Pancreas
 (C) Liver (D) Buccal cavity
- (93) Wheat, Bajari and cotton seeds when given _____ temperature quantity of crop increases
 (A) 1 to 10° C (B) 10 to 20° C
 (C) 1 to 15° C (D) 10 to 25° C
- (94) In _____ characters of child is maintained according to wish
 (A) Sexual reproduction (B) Parthenogenesis
 (C) Artificial reproduction (D) Parthenocarpy
- (95) Which plants show polyembryony
 (A) Mango (B) Cycas
 (C) Moss (D) Fern
- (96) In which plants Grafting method is successful
 (A) Monocots (B) Crop Plants
 (C) Stem sprouts (D) Meristematic present
- (97) Genetic complex of organism is same but fertilization does not occur in
 (A) Parthenogenesis (B) Polyembryony
 (C) Incompatibility (D) Parthenocarpy
- (98) Where does development of Male gametophyte starts
 (A) Anther (B) Stigma
 (C) Pollen tube (D) Style
- (99) Vegetative reproduction by Grafting is exhibited in which of the plant.
 (A) Lemon (B) Hibiscus
 (C) Tamarind (D) Litchi
- (100) Intine of pollen is made up of
 (A) Cuticle (B) Cutin
 (C) Cellulose (D) Pectin
- (101) Ovule after fertilization results into
 (A) Integument (B) Micropyle
 (C) Ovary (D) Seeds
- (102) Plant exhibiting vivipary germination
 (A) Vallisneria (B) Hydrilla
 (C) Avicennia (D) Wigelia
- (103) Breaks Dormancy of Buds & Seeds
 (A) Gibberlin (B) Cytokinin
 (C) Auxin (D) ABA

- (104) Name plant which is not short day
 (A) Rice (paddy) (B) Poppy
 (C) Xanthium (D) Soyabean
- (105) Tulip is example of what ?
 (A) Thigmonasty (B) Thermonasty
 (C) Photonasty (D) Hydronasty
- (106) Hormone which induces Geotropism
 (A) Auxin (B) Gibberlin
 (C) Ethylene (D) Cytowinin
- (107) According to Phetoperiod which plant is short day
 (A) Wheat (B) Millet
 (C) Paddy (D) Beat
- (108) Which plant produce new plants by Buds
 (A) Dioscorea (B) Chrysanthemun
 (C) Oxalis (D) Mint
- (109) Name hormone which helps in embryo development
 (A) ABA (B) IAA
 (C) GA (D) INAA
- (110) Which hormone if increases in seed leads to activity of embryo
 (A) Auxin (B) Ethylene
 (C) ABA (D) Gibberlin
- (111) Under favourable conditions which type of Asexual reproduction occurs in Amoeba
 (A) Fragmentation (B) Budding
 (C) Sporulation (D) Binary fission
- (112) In Testis there are _____ number of seminiferous tubules
 (A) 10 (B) 1,000
 (C) 100 (D) 10,000
- (113) Which hormone helps in development of Endometrium
 (A) Testosterone (B) Oesterogen
 (C) Progesterone (D) Oxydocin
- (114) When does Corpus luteum disintegrates
 (A) Every 28 days (B) Implantation occurs
 (C) pH increased in Blood (D) Implantation does not occur
- (115) It is located near basal region of urinary bladder
 (A) Seminal vesicles (B) Scrotum
 (C) Postrate gland (D) Bulbo Urethral Gland

- (116) In cockroach in Nervous system state number of ganglia
 (A) 12 (B) 15
 (C) 20 (D) 24
- (117) In Plasmodium which process decides its Life Phase
 (A) Binary fission (B) Multiple fission
 (C) Sporulation (D) Budding
- (118) In which Animal self fertilization is seen
 (A) Earthworm (B) Sponge
 (C) Hydra (D) Tapeworm
- (119) Which hormone stops growth of new ovarian follicle
 (A) Testosterone (B) Aldosterone
 (C) Estrogen (D) Progesterone
- (120) Which gland is not Man's accessory reproductive gland
 (A) Seminal Vesicle (B) Prostate
 (C) Bulbo urethral (D) Testis
- (121) In Hydra & Starfish which type of Asexual Reproduction is found
 (A) Budding (B) Sporulation
 (C) Fragmentation (D) Binary fission
- (122) Where is plant exhibiting vivipary found
 (A) Grassland (B) Temperate Zone
 (C) Desert (D) Intertidal Zones
- (123) Give examples of Accretionary Growth
 (A) Growth of Skin (B) eg. of Rotifers
 (C) Mitotic Cell division (D) Secretion of Osteoblasts
- (124) Organisms using more amount of O_2 , their life span
 (A) Increases (B) Decreases
 (C) Increases More (D) No difference
- (125) After completion of 9 months of embryo, after child's birth at 10th month state its approximate height
 (A) 50 cm. (B) 10 cm.
 (C) 150 cm. (D) 100 cm.
- (126) Which group of animals show regeneration of lost appendages
 (A) Echinoderms (B) Annelids
 (C) Amphibians (D) Mammals
- (127) From which of following animals regenerates entire alimentary canal.
 (A) Star fish (B) Hydra
 (C) Tape worm (D) Sea cucumber

- (128) Which hydrophytic plant is not submerged plant
 (A) Lotus (B) Hydrilla
 (C) Nymphaea (D) Trapa
- (129) All the members of the same species that inhabit a particular area -
 (A) Population (B) Community
 (C) Biome (D) Biosphere
- (130) Name micro organisms which oxidises Ammonia & produce Nitrates
 (A) Nitrosomonas (B) Pseudomonas
 (C) Rhizobium (D) Nitrococcus
- (131) State Growth of population in world
 (A) 0.18 % (B) 18 %
 (C) 8.1 % (D) 1.8 %
- (132) Which cells mature in Thymus gland
 (A) T Cells (B) B-cells
 (C) Memory cells (D) None of above
- (133) Dominance in Grassland
 (A) Trees (B) Shrubs
 (C) Herbs (D) Algae
- (134) Not included in floating hydrophytes
 (A) Lotus (B) Cyprus
 (C) Lemna (D) Trapa
- (135) If Birth rate falls below Deathrate then which type of map is formed
 (A) Urn shaped (B) Pyramid shaped
 (C) Bell shaped (D) None of above
- (136) Pollutant which reduces conduction of O_2
 (A) Carbon monoxide (B) Ammonia
 (C) Sulphur (D) Benzo pyrene
- (137) Stimulate phagocytes and complementary system
 (A) Ig-A (B) Ig-E
 (C) Ig-M (D) Ig-G
- (138) Where any living organisms live that place is called
 (A) Environment (B) Rocky area
 (C) Aquatic (D) Biosphere
- (139) Below Ionosphere which sphere is found
 (A) Stratosphere (B) Mesosphere
 (C) Praposphere (D) None of above

- (140) In which animals cold hardening is found ?
 (A) Frog (B) Cockroach
 (C) Crocodile (D) Reindeer
- (141) Area extending upto 16 mm from surface of earth is
 (A) Troposphere (B) Thermosphere
 (C) Stratosphere (D) Mesosphere
- (142) In this Zone Autotrophic plants are found
 (A) Limnetic Zone (B) Profundal Zone
 (C) Littoral Zone (D) Benthic Zone
- (143) Group of population growth = 100, Birth rate = 50, Death rate = 10, So population growth = _____
 (A) 150 (B) 140
 (C) 160 (D) 130
- (144) Difference between number of Living organisms in the beginning and after short period at the end is
 (A) Deathrate (B) Birthrate
 (C) Dispersal (D) Age distribution
- (145) Post reproductive group indicates a _____ in population
 (A) Growth (B) Progress
 (C) Decline (D) Stable
- (146) State examples of commensalism
 (A) Lichen (B) Orchid
 (C) Root Nodule (D) Mycorrhiza
- (147) Bacteria & Virus which are destructed by large phagocytic cells
 (A) RBC (B) Monocyte
 (C) Macrophage (D) Platelets
- (148) In which problem a person constantly is afraid
 (A) Obsessive disorder (B) Mood disorder
 (C) Schizophrenia (D) Anxiety disorder
- (149) Which fungus is medicinally important
 (A) Rhizopus (B) Penicillium
 (C) Spirulina (D) Agaricus
- (150) In Taiga Jungle _____ animals is not found
 (A) Lynx (B) Weasel
 (C) Wolf (D) Kangaroo
- (151) In our country _____ species are critically endangered
 (A) 44 (B) 62
 (C) 18 (D) 87

- (152) What does Population growth indicates ?
 (A) Pyramid (B) Urn shaped
 (C) Pot shaped (D) Bell shaped
- (153) Brazzin protein is _____ times more sweeter than sugar
 (A) 20 (B) 2,000
 (C) 200 (D) 20,000
- (154) In Savanaa forest which plant is found
 (A) Salvadora (B) Pinus
 (C) Prosopis (D) Oak
- (155) In floating hydrophytes which plants is found
 (A) Salvinia (B) Ceratophyllum
 (C) Cycas (D) Sunflower
- (156) Distorted representation of reality results into
 (A) Psychosis (B) Schizophrenia
 (C) Phobia (D) Tension
- (157) On new island which type of succession is found
 (A) Land (B) Hydroseric
 (C) Primary (D) Secondary
- (158) What is percentage of Methane in Biogas
 (A) 30 % (B) 40 %
 (C) 50 % (D) 60 %
- (159) Among following which symptom is not for cancer
 (A) Weight loss (B) Body ache
 (C) Blood in spit (mucus) (D) No changes in moles
- (160) Which cells activate to produce Antibody of B-cells
 (A) T-cells (B) Suppresor T-cells
 (C) Willer-T cells (D) Helper T-cells
- (161) Method to break stones in kidney
 (A) Sonography (B) MRI
 (C) CAT Scan (D) Endoscopy
- (162) In food supply DDT is found in maximum amount because _____
 (A) It is used extensively (B) It is insecticide
 (C) It is not degradable (D) It is soluble in water
- (163) In which animal is OmniVorous
 (A) Tuna (B) Spider
 (C) Red Sparrow (Robin) (D) Warblers
- (164) Which grains Hybrid was produced first
 (A) Wheat (B) Bajari
 (C) Maize (D) Rice (Paddy)

- (165) In which treatment Erythropoietin is used
 (A) Cancer (B) Anaemia
 (C) Influenza (D) AIDS
- (166) Which type of jungles are found in Africa
 (A) Deciduous (B) Savanaa
 (C) Temperate (D) Taiga
- (167) It is sedimentary cycle
 (A) Phosphorus cycle (B) Nitrogen cycle
 (C) Sulphur cycle (D) None
- (168) Which method is used to diagnose slip disc in vertebral column
 (A) CT Scan (B) Angiography
 (C) MRI (D) CAT Scan
- (169) Cancer of skin is _____
 (A) Sarcoma (B) Melanoma
 (C) Leukemia (D) Carcinoma
- (170) Which bacteria does oxidation of Ammonia to produce Nitrate
 (A) Pseudomonas (B) Nitrosomonas
 (C) Pseudopodia (D) Nitrococcus
- (171) Which plant is Reed Swamp Plant
 (A) Lemna (B) Crutose lichen
 (C) Ceratophyllum (D) Cyprus
- (172) In 1 acre dessert ____ kg CO₂ is added in environment
 (A) 2,000 (B) 2,00,000
 (C) 20,000 (D) 200
- (173) Which families of plant are not included as Petroplant
 (A) Apocynaceae (B) Asclepidiaceae
 (C) Solanaceae (D) Euphorbiaceae
- (174) In our country how many living organisms are endangered.
 (A) 44 (B) 62
 (C) 18 (D) 87
- (175) State immunoglobulin that play role in Allergy
 (A) Ig-A (B) Ig-D
 (C) Ig-E (D) Ig-M
- (176) Due to which mode of nutrition Biogeo chemical cycles is balance is maintained.
 (A) Autotrophic (B) Paracitic
 (C) Saprophytic (D) Chemosynthetic

- (177) Acts as Phagocyte
 (A) Lymphocytes (B) Monocytes
 (C) Basophils (D) Acidophils
- (178) State poison found in oily seeds
 (A) DDT (B) Morphine
 (C) Glycosynolate (D) CRY
- (179) Pantiga di Plandra Borazzena is of which country
 (A) America (B) Europe
 (C) India (D) Africa
- (180) Diseases causing pathogens on root system
 (A) Nematodes (B) Bacteria
 (C) Fungi (D) Protozoa
- (181) Rinder pest is caused due to
 (A) Bacteria (B) Protozoa
 (C) Virus (D) None
- (182) Brassica is included in
 (A) Family (B) Species
 (C) Genus (D) Order
- (184) Which variety is pure form of wheat
 (A) HWU 648 (B) HVU 468
 (C) HUW 684 (D) HUW 468
- (185) Melanoma is cancer in which part of body
 (A) Bone (B) Skin
 (C) Uterus (D) Breast
- (186) How many proteins function in an orderly manner in complementary system
 (A) 20 (B) 50
 (C) 40 (D) 30
- (187) What is present in blood of Human having SCID
 (A) RBC decreases (B) Lymphocytes increases
 (C) Lymphocytes decreases (D) Platelets decreases
- (188) Method for deciding HLA compatibility of donor & recipient organ
 (A) Tissue regulation (B) Tissue culture
 (C) Tissue transplant (D) Tissue Typing
- (189) Which are STD disease
 (A) Gonorrhoea (B) SCID
 (C) RBC (D) WBC

- (190) Method to cure cancer
 (A) Sonography (B) PET
 (C) DSA (D) MRI
- (191) Treatment of what is hindered response
 (A) Cytokines (B) Immune cella
 (C) Immuno therapy (D) Auto immune
- (192) Which Ray are emitted when Radioactive atom decomposes subatomic units like positions
 (A) Delta (B) Beta
 (C) Gama (D) Alpha
- (193) Epilepsy, Parkinssons, and Schizophrenia are checked by :
 (A) CAT (B) PET
 (C) MRI (D) NMR
- (194) Name the method helpful for diagnose and cure
 (A) CAT (B) PET
 (C) ECG (D) MRI
- (195) Who invented X-Rays
 (A) Madame Cury (B) Ruther Ford
 (C) Roentegen (D) Wilmunt
- (196) What is Immuno modulators
 (A) Proteins (B) Hormone
 (C) Medicine (D) Enzyme
- (197) Which is obsessive - compulsive disorder
 (A) Distorted thoughts (B) Get trapped in same definite thoughts
 (C) Change in Mood (D) Suicidal attempts
- (198) Approximate Annual Growth of populations equation :
 (a) $\left(\frac{P_2 - P_1}{P_1 \times N} \right) \times 100$ (b) $\left(\frac{P_1 - P_2}{P_1 \times N} \right) \times 100$
 (c) $\left(\frac{P_1 - P_2}{P_2 \times N} \right) \times 100$ (d) $\left(\frac{P_2 - P_1}{P_2 \times N} \right) \times 100$
- (199) What is CRY Protein
 (A) Insecticide (B) Pesticide
 (C) Poisonous Medicine (D) Antibiotic
- (200) What is Oncogene
 (A) Jumping gene (B) Gene
 (C) Cancer gene (D) Recombinant gene

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SECTION - B

* Questions 17 to 32 are very short questions of 1 mark each

- (1) Define Osmosis
- (2) State the factors which influence water potential
- (3) Explain Root pressure
- (4) Name the process in which a semipermeable membrane is kept between two solutions having different concentration
- (5) State aspects affecting process of Osmosis
- (6) What is Interrelationships between Ψ_P and Turgor pressure
- (7) What is soil solution
- (8) State examples of semipermeable membrane
- (9) What is Imbibition
- (10) State main factors affecting Transpiration
- (11) Name : Mineral which is required in synthesis of middle lamella which occurs between cells
- (12) What is importance of minerals in plants
- (13) Write full form of NIF, FAD.
- (14) Which process produces AA
- (15) Name product formed by reaction of Glutamate dehydrogenase
- (16) Write Reaction of Donnan Equilibrium
- (17) What is role of study of method of Hydroponics
- (18) In conduction of mineral nutrition which 3 factors are responsible
- (19) In which process FAD is synthesized
- (20) Name mineral which forms cytoskeleton
- (21) State Effects of increase in CO_2 concentration on C_3 and C_4 Plants
- (22) In C_4 Cycle - Oxalo acetic acid is converted into what
- (23) Name pigment present in photosynthetic bacteria which chemicals do they use.
- (24) Importance of nutrients in Nepenthes
- (25) Name electron carrier substances which transport electron in Non cyclic photophosphorylation
- (26) What is Kranz Anatomy
- (27) What is Rubisco
- (28) What is Photorespiration
- (29) Define Respiratory substrate
- (30) Which molecule in chloroplast helps in oxidation
- (31) State Respiratory Quotient of Tripalmitin and Oxalo acid
- (32) Explain RQ of Anaerobic Respiration.
- (33) What is compensation point.
- (34) Define Respiratory Substrate

- (35) Write equation of Anaerobic respiration in plants
- (36) Write equation of Anaerobic respiration in Animals.
- (37) What is Respiratory Quotient.
- (38) Write equation of Respiration.
- (39) What is carboxylation
- (40) State importance of Nutrition
- (41) State Function of Vitamin-B
- (42) State the minerals which help in maintaining pH
- (43) What is Food source of Tocoferol
- (44) What is malnutrition.
- (45) State source and Importance of Iodine,
- (46) State Source of calciferol.
- (47) State chemical nature of carbohydrate and its calory value.
- (48) Name enzyme present in salivary juice and has germicidal activity.
- (49) State source and function of cholecystokinin.
- (50) State names of parts involved in formation of bolus.
- (51) Explain phenomenon of water, water soluble substances and Amino acid absorption in ileum.
- (52) State source and function of Lysozyme
- (53) In process of swallowing which organs takes part.
- (54) Give difference between Thecodont and Heterodont.
- (55) State constituent of Gastric juice.
- (56) State function of Renin.
- (57) State Accessory digestive organs in Man.
- (58) What is Peristalsis.
- (59) What is emulsification.
- (60) State function of secretin.
- (61) Name the muscles present in trunk of cockroach
- (62) State number of spiracles in cockroach.
- (63) What is Emphysema.
- (64) State characteristic of respiratory surface.
- (65) Give name and arrangement of first seven pairs of ribs attached to sternum on ventral side.
- (66) In cockroach what is pericardial sinus called.
- (67) Transport of CO₂ through Blood as solution.
- (68) State function of ventral cord.
- (69) Give function of Haemolymph.
- (70) Name the instrument used to measure B.P.
- (71) Why Body cavity in cockroach called as haemolymph.

- (72) Name sound of heart beat for longer duration and shorter duration.
- (73) State two reasons responsible for increasing B.P. to 140/90 or more.
- (74) Why S.A. node Pacemaker is called so ?
- (75) How is thoracic duct formed.
- (76) With what is pulse of arteries related.
- (77) Define Portal vein.
- (78) What happens at last heart beat of 0.40 second.
- (79) State amount of Lymphocyte and which protein it produces.
- (80) State function of Lymphnode.
- (81) What is present in proximal convoluted tubule.
- (82) Which disease is caused when uric acid increases in urine.
- (83) what is responsible for Renal Pyramid like region in kidney.
- (84) Name location and function of excretory organ found in crustacean arthropods.
- (85) What is osmoregulation.
- (86) Function of sebaceous gland.
- (87) On basis of osmoregulation name type of Animals.
- (88) What is sarcomere.
- (89) Give two examples of Algae exhibiting flagellary movement.
- (90) What is vertebro chondrial ribs
- (91) State location of Hinge joint.
- (92) Name muscles involved in inspiration and expiration.
- (93) Which fluid is present in synovial joints.
- (94) Name longest bone in Man.
- (95) How many curvatures are there in entire vertebral column.
- (96) What is floating ribs.
- (97) What is other name of brain of Cockroach.
- (98) In Autonomous nervous system through what is nerve impulse conducted.
- (99) What is other name of Parasympathetic system and name neurotransmitter released in activity of this system.
- (100) Function of Na-K pump
- (101) Name pigment present in Rod cells and state its function.
- (102) Which is longest nerve of brain.
- (103) State importance of Hippocampus.
- (104) State function of Thalamus.
- (105) Where is Aqueous humor produced.
- (106) What is focusing.
- (107) State function of Otoliths.

- (108) What is membrane potential.
- (109) Give location and function of Thyroxine.
- (110) What is effect of hormone secreted by Pineal gland on Endocrine system.
- (111) Formation of G-Protein and its effect.
- (112) What is activated by G-Protein present in Plasma membrane.
- (113) Full form STH, MSH.
- (114) On which activity does Endocrine system acts.
- (115) What is LH called in Male.
- (116) Name hormone which reduces pain and inflammation of joints.
- (117) What is constituent of C-AMP.
- (118) Which is primary messenger
- (119) In Lemon which artificial method is used for reproduction.
- (120) What is parthenogenesis.
- (121) Which cells take part in Implantation.
- (122) What is vernalization.
- (123) What is nucellus.
- (124) State full form of NAA
- (125) Explain term incompatibility.
- (126) State reasons for incompatibility.
- (127) State Importance of Incompatibility.
- (128) What is Parthenocarpy.
- (129) Give full form of IVAA.
- (130) What is Life Span.
- (131) What is Fragmentation.
- (132) Define synapse
- (133) State example of short day plants.
- (134) Give 2 example of plants showing viviparous germination.
- (135) From which cells is Root cap formed in Root of Pandanus.
- (136) What is Tropism.
- (137) Define Leaf fall.
- (138) Give full form of IBA, 2-4-D
- (139) Name hormone which is secreted from Fungus.
- (140) What is Long day Plant.
- (141) What is Nutation.
- (142) What is Taxis.
- (143) What is Endogenous budding.
- (144) State Location and Function of Lentic Cells.

- (145) State Location and Function of Bulbo urethral Gland.
- (146) Name enzyme secreted from Acrosome of sperm.
- (147) What is present in centre of sperm ? State its function ?
- (148) What is ovulation.
- (149) what is Morula.
- (150) State outer membranes surrounding embryo.
- (151) State function of placenta.
- (152) Name the four membrane outside Embryo.
- (153) Define Senescence.
- (154) How is free radical molecule formed.
- (155) With Ageing how is message conduction through Brain occurs.
- (156) State Regeneration in Hydra, Planaria and Lizard.
- (157) State two effects of Gibberellins.
- (158) Importance of dedifferentiated tissues in Salamander.
- (159) What is Gerontology.
- (160) What is HGH.
- (161) What is Epimorphic Regeneration.
- (162) What is Regeneration.
- (163) What is Absolute increase.
- (164) Give examples of Reserved Cells.
- (165) When is multiplicative observed.
- (166) State examples of Free Floating hydrophytes
- (167) State difference between maximum and expected life span.
- (168) Which kind of leaves and stomata occur in desert plants.
- (169) Explain plants with Adaptations to High Temperature.
- (170) What is Tolerance Range.
- (171) State two adaptations of Xerophytic plants.
- (172) What is predation.
- (173) Define phytoplankton.
- (174) What is carrying capacity.
- (175) At which time, growth rate of insects is most rapid.
- (176) Explain Range of Tolerance.
- (177) Which kind of inter relationship is observed in Orchid.
- (178) State examples of Amphibious plants.
- (179) Give examples of plants of Reed Swamp stage.
- (180) State types of Food chain.
- (181) Write equation of Assimilation efficiency

- (182) Give names of Denitrifying bacteria.
- (183) Give two names of Nitrogen fixing bacteria.
- (184) In water cycle pioneer stage which organisms take part.
- (185) State example of non-conventional resources.
- (186) Full form of ICAR.
- (187) Give two names of nitrogen fixing bacteria.
- (188) Name four global problems.
- (189) State the reasons for changes in environment.
- (190) Name any two countries which collectively show natural growth rate of 0.6 %.
- (191) Explain Psychosis - Neurosis.
- (192) What is subculture.
- (193) What are reasons for reduction in death rate.
- (194) Name two sanctuaries located in our state.
- (195) Observed symptoms in schizophrenia behaviour.
- (196) Importance of Gymnaea sylvestre.
- (197) What is Phobia.
- (198) Name departments which are active in Biodiversity conservation all over world.
- (199) What is effect of Arsenic substance and chlorine compounds on human life.
- (200) What is Hypochondria.
- (201) How and where is Geothermal Energy generated.
- (202) Full form of COD, BOD.
- (203) Production and Importance of CRY.
- (204) On which aspect soil conservation depends.
- (205) Which protein is 2000 times sweeter than sugar.
- (206) What is Biowar.
- (207) What is In Vitro.
- (208) Importance of Rice varieties found in Asia.
- (209) Write reactions of chlorine for depletion of ozone.
- (210) Which families of plant can act as an alternative of liquid fuel.
- (211) Importance of Interferon.
- (212) Two methods of diagnosis of STD.
- (213) Define Mammography.
- (214) Write a note on Sonography method and utility.
- (215) What is Antibody.
- (216) State types of cancer.
- (217) Full form of PCR.
- (218) Which cells are called Immune Module cells.

- (219) What is sub culture.
- (220) What is Biopiracy.
- (221) Give common examples of Biopiracy.
- (222) Function of Killer T-cells.

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SECTION - C

• **Answer following questions in approximately 30 words.**

- (1) Define Transmembrane transport, Ascent of Sap.
- (2) Explain symplast pathway and Apoplast pathway.
- (3) Explain with figure Diffusion.
- (4) According to permeability explain with help of chart different types of membrane with example.
- (5) If Green grapes kept in salt water for some time then kept in fresh plain water. Explain process observed in it.
- (6) State effect of CO₂ concentration and Light on opening and closing of stomata.
- (7) Write a note on Imbibition.
- (8) Explain Active absorption of Minerals.
- (9) Describe Synthesis of Amino acid.
- (10) Importance of Transpiration - Explain
- (11) Short note on Pigment system.
- (12) Explain Role of essential elements and Hydroponics.
- (13) Explain source of essential elements.
- (14) Explain Chemosynthetic Nutrition.
- (15) Write a note on PPP path.
- (16) Distinguish between PS I and PS II
- (17) Give reason : In absence of Rubisco Calvin cycle and Photorespiration is not possible.
- (18) In absence of O₂ degradation of Pyruvic acid. Describe above statement.
- (19) Explain Importance of Kreb's cycle.
- (20) Describe Absorption.
- (21) Explain Ingestion.
- (22) Describe Saprophytic Nutrition.
- (23) Write a note on Faecal formation.
- (24) Describe Holozoic Nutrition and its type.
- (25) Explain Autotrophic Nutrition in Plants and its two alternative forms.
- (26) "Food from buccal cavity is alkaline passes into stomach has to have acidic property" Give reason.
- (27) Give reason : Pancreas acts as endocrinal and Exocrinal gland.
- (28) Give reason : Enzyme protease is in inactive state in Gastric and Pancreatic juice.
- (29) Explain formation of chyme in Human.
- (30) Give information about Human Teeth.
- (31) State structure of salivary gland in Cockroach.
- (32) State necessary digestive gland in human and describe any two in detail.
- (33) Explain terms : Thecodont and diphyodont.

- (34) Explain process of Exhalation.
- (35) Give reason : During Transport of CO_2 chloride and HCO_3 shifting is necessary.
- (36) Explain Pneumonia.
- (37) Note on : Transport of O_2 through Blood.
- (38) "Regulation of Breathing" Explain it.
- (39) Write a note on spiracles in cockroach.
- (40) Explain any 2 granular WBC.
- (41) Write a note on ECG
- (42) Write a note on Pace Maker.
- (43) Explain Close circulation.
- (44) Important functions of Lymphatic system.
- (45) Describe circulation of Haemolymph.
- (46) Describe Human Cardiac cycle.
- (47) Describe Uricotelic organisms and Uricotelism.
- (48) State constitution of urine in Human.]
- (49) Describe osmo regulation in Marine Animals.
- (50) Location of Urineferous tubules : Explain.
- (51) Formation of Excretory substances. Explain it.
- (52) Structure of kidney (figure with labelling)
- (53) Function of Endoskeleton.
- (54) Which disorder of bones occurs due to prolonged cortisone treatment.
- (55) Write a note on Pelvic Girdle.
- (56) Describe sliding Theory.
- (57) Describe Rheumatoid Arthritis.
- (58) Explain Regulation of Secretions of Pituitary Gland.
- (59) State effect of hormones secreted from Adrenal cortex.
- (60) Write a note on subserophageal ganglion.
- (61) Describe structure of taste buds and function.
- (62) Explain Terms : Otoliths, Membranous labyrinth.
- (63) Write a note on choroid.
- (64) Distinguish between Nervous and Endocrine systems (giving 4 points)
- (65) Explain Nerves of Spinal cord.
- (66) Describe Limbic system.
- (67) Describe : House keeping system.
- (68) Describe about gland which is ovoid, reddish or yellowish on posterior part of thyroid gland.
- (69) State Location, Secretion and function of parathyroid gland.
- (70) Differentiate giving four points. Steroid hormone and peptide hormone.

- (71) State reasons for Diabetes and its symptoms.
- (72) Explain Hormone of Posterior Adrenal gland.
- (73) Explain Parthenogenesis.
- (74) Write a note on Grafting.
- (75) State function of sympathetic Nervous system.
- (76) Describe structure of pollen grain.
- (77) Write a note on placenta.
- (78) What is Nastism ? Explain Nastism in plants.
- (79) Describe about plant hormone obtained from sperm of Herring fish.
- (80) Write note on Vernalization.
- (81) Explain Method for producing seedless fruits.
- (82) Describe S-graph for Growth.
- (83) State importance of wind pollinated plants.
- (84) What is budding ? Explain budding in Animals.
- (85) Write a note on Conjugation.
- (86) Explain term : Encystation and Yelksac.
- (87) Describe Uterine cycle.
- (88) Explain Asexual Reproduction.
- (89) Explain structure of Penis and Erection (figure not necessary)
- (90) Name hormones secreted by ovary and its function.
- (91) Explain Accessory Reproductive glands helps in production of semen.
- (92) Explain Theory of Error Catastrophe and somatic mutation theory.
- (93) Name two types of Regeneration and describe them.
- (94) Explain B and T cells die at definite period.
- (95) Explain Hormonal regulation of Growth.
- (96) What Epimorphic regeneration.
- (97) Explain Free Radical Theory.
- (98) "Adaptations to Saline Habitat" Explain.
- (99) Describe three zones in a lake or a pond on the basis of light penetration.
- (100) Describe soil profile.
- (101) Write a note on Dormancy.
- (102) Describe four examples of Mutualism in Animals.
- (103) Explain Predation.
- (104) Write a note on commensalism.
- (105) "Factors affecting Decomposition" Explain it.
- (106) State the stages in process of Decomposition.
- (107) Describe "Savanna Jungle"

- (108) Explain loss of Nitrogen from Ecosystem.
- (109) Write a note on : Cold deserts.
- (110) Explain primary succession.
- (111) Explain two factors for growth.
- (112) Write a note on Mineral Resources.
- (113) Describe changes induced during succession.
- (114) Write a note on Production of Atomic energy and limitations.
- (115) What points are kept in mind for Management of Gralssland.
- (116) "Kinds of Natural Resources on the basis of Amount" Describe.
- (117) Write a note on Eutrophication.
- (118) Explain phases of Sewage treatment.
- (119) "Control of soil pollution" Explain.
- (120) Write a short note on Sewage process.
- (121) Write a note on Zones of Biosphere Reserves
- (122) Write a note on Biogas.
- (123) Describe briefly J shaped population growth (with figure)
- (124) Write a note on : Mental illness.
- (125) Write a note on : Behaviour problems.
- (126) "Imbalance in Environment" man is responsible for these. Explain.
- (127) Write a note on : Callus
- (128) Explain Interspecic Hybridization.
- (129) Write a note on : Genetically Modified Food.
- (130) Write a Note on Plant Tissue culture and embryo culture and its application.
- (131) Symptoms of Schizophrenia.
- (132) Short Note on Selection.
- (133) Explain : Inbreeding.
- (134) Give information about Digital subtraction Angiography.
- (135) Write about characters of Cancer cells.
- (136) Describe 2 medicinal approaches for immunomodulators.
- (137) Explain Birth Rate & Death Rate.
- (138) Explain : Stabilization.
- (139) Give information about Brazzien Protein.

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SECTION - D

• **Answer following questions in approximately 50 words.**

- (1) Explain Theory of K^+ ion
- (2) Explain theory of function force due to Transpiration.
- (3) Describe factors affecting Transpiration.
- (4) What is water potential ? Describe in detail with measurement and its equation.
- (5) Describe : Effect of any one of each : Macroelement and Micro element on Photolysis of water and also state its importance.
- (6) Describe : Nitrogen Metabolism.
- (7) Describe Nitrogen fixation with figure.
- (8) Explain : Process of Nitrification.
- (9) Write a Note on Importance of essential elements and hydroponics.
- (10) Describe : Photolysis of water.
- (11) Describe : Cydic electron transport (chart necessary)
- (12) Distinguish between C_3 and C_4 path.
- (13) What is photorespiration ? Describe with chart Role of Rubisco in Calvin cycle.
- (14) Describe Oxidative Phosphorylation (Chart not necessary)
- (15) Describe : Glycolysis with chart.
- (16) Describe process occurring in Mitochondria (Chart not necessary)
- (17) Describe Citric acid cycle. (chart necessary)
- (18) Explain Digestion.
- (19) Based on mode of obtaining food, Describe kinds of nutrition Methods in Animals.
- (20) Describe : Heterotrophic Nutrition.
- (21) Digestion in Cockroach.
- (22) Describe arrangement of Human teeth with figure state only types.
- (23) Describe digestion in stomach.
- (24) Describe Digestive system in cockroach.
- (25) Explain Respiratory organs of Human.
- (26) Describe occupational people who suffer from various lung diseases.
- (27) Describe conduction of maximum amount of CO_2 through blood.
- (28) Describe about Hypertension.
- (29) Describe Structure of Human heart (figure not necessary)
- (30) Explain different types of Granulocytes WBC
- (31) Describe Blood circulation in Human.
- (32) Describe structure of uriniferous tubule.
- (33) Describe Blood supply to uriniferous tubule.

- (34) Describe Active process of urine formation.
- (35) Describe about Artificial kidney method and kidney transplant.
- (36) Describe Internal Structure of kidney with figure.
- (37) Explain structure of striated muscle.
- (38) Describe vertebrae of vertebral column.
- (39) Write a note on types of joints.
- (40) Describe process of muscle contraction.
- (41) Describe Bones of Hind limbs.
- (42) Explain Tongue acts as Taste Sensitive organ.
- (43) Describe : Structure of Olfactory Neurons.
- (44) State structure, location and function of Diencephalon.
- (45) Describe activity of action potential.
- (46) State secretion and function of Thyroid gland and explain Myxoedema.
- (47) Secretion and function of Adrenal gland. Explain it.
- (48) Discuss Secretion of hormone secreted from Anterior part of Pituitary gland.
- (49) State function and diseases caused due to deficiency of hormone secreted by gland located below larynx.
- (50) State effect of Testosterone.
- (51) Describe type of fertilization in Angiosperms.
- (52) Explain Parthenocarpy.
- (53) Explain Post Embryonic Growth.
- (54) Describe Pollination occurring through living organisms.
- (55) Explain double fertilization with figure.
- (56) Write a note on Seed germination in plants.
- (57) State importance of hormone in plants which is helpful for its long life.
- (58) Explain in detail photoperiodism.
- (59) Explain Gibberellins break seed Dormancy while ABA promotes seed dormancy.
- (60) Write a note on Gibberellin-1 a plant hormone.
- (61) Write a note on Seed Germination.
- (62) Describe Growth Inhibitor in plants.
- (63) State reasons of seed dormancy and how seed dormancy can be broken.
- (64) Describe membranes remaining outside the embryo and protect as well as nourish the embryo.
- (65) Write a note on Range of Regeneration in Animals.
- (66) State factors leading to Ageing.
- (67) State effect of hormones on Ovarian cycle.
- (68) Describe Female Reproductive System. (figure not necessary)

- (69) Write a note on Environmental Adaptations in Animals.
- (70) Describe different climatic zone.
- (71) Explain types of Growth.
- (72) Explain three points of view for structure of Ecosystem.
- (73) Explain Parasitism.
- (74) Write a note on Ecological Pyramid.
- (75) Describe Nitrogen cycle.
- (76) Explain Primary producers.
- (77) Describe process of Decomposition.
- (78) Write a note on Hydrosere succession - floating stage.
- (79) Write a note on Hydrosere succession before Reed Swamp stage.
- (80) Describe Pioneer Stage.
- (81) Describe different methods of Soil conservation.
- (82) Different types of Ecosystem.
- (83) Explain Manmade reservoirs having short period.
- (84) Effect of water pollution on Aquatic Ecosystem.
- (85) Describe Eutrophication.
- (86) Write a note on sewage pollution.
- (87) Kinds of Ecosystem diversity.
- (88) Explain Hypochondria, Phobia, Schizophrenia.
- (89) Write a note on Biofertilizers.
- (90) "Development of a disease in plants is based on 5 aspects of infectants at various stages" Explain.
- (91) Explain Biopatent
- (92) Describe Biopiracy.
- (93) State reasons leading to Addiction
- (94) Symptoms of Mental uneasiness and illness.
- (95) Methods of Diagnosis of Cancer.
- (96) Note on Cells of Immune System.
- (97) Write a Note on Hormone therapy through Biotechnology.
- (98) Write a note on Endoscopy.
- (99) Write a note on DSA
- (100) With help structure of ovule describe development of female gametophyte.

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SECTION - E

- **Answer following questions in approximately 100 words.**
- (1) Describe factors affecting transpiration
- (2) Describe K^+ therapy (figure necessary)
- (3) Describe mechanism of opening and closing of stomata.
- (4) Write a note on Nitrogen fixation with figure.
- (5) Describe Hatch Slack Pathway.
- (6) Explain in detail Non cyclic Photophosphorylation.
- (7) Describe process occurring in Mesophyll and Bundle sheath cells.
- (8) Describe C_4 path.
- (9) Describe Kreb's cycle.
- (10) Describe process taking place in cristae of Mitochondria.
- (11) Describe Anaerobic phase of Aerobic respiration with chart.
- (12) Explain number of ATP formed when one Glucose molecule is phosphorylated.
- (13) Describe Glycolysis with chart.
- (14) Describe process of Respiration occurring in Cytoplasm.
- (15) Describe digestion in man which occurs without using gastric juice and intestinal juice.
- (16) Describe digestion of Protein in Alimentary canal.
- (17) Write a note on digestion of chyme.
- (18) Write a note on CO_2 through blood.
- (19) Describe about cells which are active, mobile, pigmentless and play important role in disease resistance.
- (20) Describe ECG
- (21) Describe course of circulation through Heart (with figure)
- (22) Write a note on "Process of Heart beat and its Regulation"
- (23) Describe Urine formation.
- (24) Describe Internal Structure of Kidney with figure.
- (25) Explain Bones of Forelimb with figure.
- (26) Explain Bones of Hindlimb with figure.
- (27) Describe structure of Eye with figure.
- (28) Write a short note on Cerebrum.
- (29) Describe Reflex Action with Figure.
- (30) Describe Internal Structure of Nose.
- (31) Explain different types of Joints.
- (32) Give information regarding diseases caused by imbalance of Hormones.
- (33) Describe structure of ovule and development of female Gametophyte.

- (34) Explain Double Fertilization with figure.
- (35) Describe Parthenocarpy.
- (36) Describe Embryo development of capsella with figure.
- (37) Describe curvature Movement in Plants.
- (38) Write a note on Effect of Gibberellins on plants.
- (39) Explain "Effect of Auxin and Cytokinin as Growth promoter"
- (40) Describe Embryo development in Human.
- (41) Describe Female Reproductive Organs (Fig. not necessary)
- (42) What is Growth ? Describe Types of growth in Animals.
- (43) Describe Error and Damage Theories leading to Ageing.
- (44) Describe Range of Regeneration in Animals
- (45) Explain Adaptations of Water Scarcity and High temperature.
- (46) Describe Soil profile and Properties of Soil.
- (47) Describe main horizons and properties of soil.
- (48) Describe Mutualism among plants and animals.
- (49) Describe process of Decomposition.
- (50) "Adaptations to Aquatic Habitat" Explain this statement.
- (51) State causes of succession.
- (52) Describe submerged Hydrophyte stage and floating stage.
- (53) Describe Hydroseric succession.
- (54) Explain Xeroseric succession.
- (55) state causes for succession and changes induced during succession.
- (56) "Non conventional Energy" Explain
- (57) Describe "Fossil Fuel"
- (58) Describe methods of Soil Conservation.
- (59) What is Noise Pollution ? State cause and control of Noise Pollution.
- (60) State the effect of depletion in stratosphere in detail.
- (61) State common problems of Adolescence.
- (62) Describe different organisms causing diseases in plants and their control.
- (63) Write short note on G.M. Food and Biowar.
- (64) Describe Symptons of Aids.
- (65) Describe in detail Antibody Mediated Immunity.
- (66) State barriers of Innate Immunity.
- (67) Explain types of cancer and state its causes.
- (68) State symptoms of cancer and explain its treatment by surgery and radiation therapy.
- (69) What is specific Immunity ? State characteristics.

- (70) "Defects arising due to deficiency of Immunity" Explain this statement.
- (71) Write a note on Sonography.
- (72) Describe about Sonography and its method and utility.
- (73) State activity of Transducer and describe examination and treatment of it.
- (74) Describe Magnetic Resonance Imaging.
- (75) Method of PET and its function.
- (76) State Reason for establishing world conservation union.
- (77) What is Biodiversity ? State reasons for Biodiversity.
- (78) Describe Functions of Biodiversity.
- (79) Define Photosynthesis and process of PS I and PS II in chloroplast.
- (80) Describe Photophosphorylation occurring in chloroplast.

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