SSC BIOLOGY Suggestion--2020

Chapter-1 Lesson on Life

(a) Taxonomy, Binomial Nomenclature, ICZN, ICBN, Scientific names of organisms from text.

(b) 1. Necessity of classification. 2. Taxonomy of human being.
3. Differentiate algae and fungi. 4. Archegoniate.
5. Characteristics of the kingdoms. 6. Rules of binomial nomenclature.
7. Plantae and Animalia are more developed than the other kingdoms.—Explain.

Chapter-2 Cell and Tissue of organism

(a) Cell, tissue, haploid, diploid, oxysome, ribosome, cristae, mitochondria, chromosome.

(b)? 1. Functions of E. R. 2. What is centrosome, stone cell, salaried, bast fiber?

(c) 1.How can plastids help to survive the living kingdom?
2. Analyze the structure and functions of different muscular tissue.

Chapter-2 Cell Division

(a) Spindle fiber, contraction fiber aster ray, interphase, amitosis, mitosis, meiosis , telocentric chromosome, cytokinesis.

(b) 1. What do you mean by educational and reduction division?
2. Write down the cause of formation of cancer cell? 3. Why does not amitosis occur in human being?

(c)1. Difference between mitosis and meiosis.
2.Explain the stage where the chromosome becomes shortest and thickest ?
3. Explain the last stage of mitosis. 4. Importance of mitosis.
5. What will happen if meiosis does not occur ? 6. Meiosis creates genetic variation. –How?

Chapter-4 Bioenergetics

(a) ATP, AMP, energy coin, photophosphorylation, photolysis of water.

(b) 1. Why is ATP called the energy coin?
2. Aerobic respiration produces more energy than anaerobic respiration. –Why?
3. Rate of photosynthesis is more in aquatic plant than in terrestrial plant. –Why?
4. Why are amaranthus and sugarcane called C4 plant?
5. Rate of photosynthesis decreases if the amount of CO_2 increases.-Why?
6. Rate of photosynthesis is less in young and old leaf. –Why?
7. What is the role of chlorophyll photosynthesis?

(c,d) 1. How does temperature influences the process of photosynthesis?
2. ADP+Pi =ATP. Explain the process. 3. Differentiate between respiration and respiration.
4. Differentiate between Aerobic respiration and anaerobic respiration.

5. Explain the role of light in photosynthesis. 6. Write down the steps of aerobic respiration.
7. External factors of photosynthesis. 8. Role of respiration/photosynthesis in environment.
9. Cytoplasmic stages of respiration. 10. One molecule glucose produces 38 ATPs. – Explain.

Chapter -5 Food ,Nutrition and Digestion

(a) Mineral nutrients, macro and micro nutrients, chlorosis, die back ,roughage, ideal food pyramid, balanced diet, BMR,BMI, digestion, assimilatory power, peristalsis, chime, causal organism of dysentery.

(b)1. Why is liver called the organic laboratory? 2. Pancreas is a mixed gland.-Why?
3. What do you mean by adulteration of food? 4. What do you mean by roughage?

(c)1. Role of N. P, Fe, Ca in plant. 2. Calculate the BMR and BMI of both male/female.
3. Explain human digestive system with diagram. 4. Structure and role of liver.
5. Explain the human digestive glands.
6. Explain the process of digestion of food in mouth, stomach and small intestine.
7. How are the following foods digested? : Rice, Fish, Fatty foods.

(d) 1. Characteristics of balanced diet.
2. Roles and deficiency symptoms of carbohydrate, protein , vitamin and minerals.
3. Explain the causes, symptoms and remedies of the diseases below :
Diarrhoea, Dysentery, Constipation, Peptic ulcer.

Chapter-6 Transportation in organism

(a) Imbibitions, Diffusion, Osmosis .Transpiration, Cell sap, Semipermeabla membrane, Active and passive absorption, cuticular transpiration, Blood, Plasma, Blood group, Diffusion pressure deficit. Antigen and Antibody, Valve, Circulation of blood, Blood pressure, Cholesterol, Angina, Heart attack, Pericardium, Rheumatic fever. Closed circulatory system.

(b) 1. Differentiate between artery and vein. 2. Merits and demerits of cholesterol.
3. Why does stone form in gall bladder? 4. Why does blood clot ?
5. Transpiration is a necessary evil.- Explain.

(c) 1.Importance of diffusion and osmosis. 2. Types of transpiration.
3. Water and mineral absorption in plant. 4. Features of RBC, WBC and Platelets.
5. Structure of human heart with diagram. 6. Features of artery, vein and capillary.
7. Internal circulation of blood in the heart. 8. Cause, symptoms, remedy of heart disease.

(d) 1.Factors of transpiration. 2. Functions of blood.
3. Cause, symptoms and remedy of Heart attack, stroke and Rheumatic fever.

Chapter-7 Gaseous Exchange

(a) Lenticels, respiration, respiratory system, soft palate, vocal cord, diaphragm, trachea, alveolus, pleura, bronchiole, epiglottis, causal organism of TB.

(b) 1. It isunsafe to sleep under big tree at night-why? 2. Why sudden cold air cannot harm the lungs?

3. What do you mean by diaphragm? 4. Chronic bronchitis.
5. Symptoms of pneumonia. 6. How is air purified in lungs?

(c)Structure of lung. 2. Role of diaphragm in respiration. 3. Exchange of O2 and CO2 in respiration.
4. Symptoms of asthma disease. 5. Cause of cancer of lungs.

(d) 1.How can you keep your lungs sound? 2. Between pneumonia and TB, which one is more harmful?
3. Prevention and remedy of TB and asthma.

Chapter-8 Excretory system

(a) Urochrome , excretion, excretory system, renal capsule, papilla, nephron ,nephritis, osmoregulation, pelvis, posthumous donation of kidney

(b) 1.Cause of alkalinity and salinity. 2. Function of kidney. 3. Why is kidney called the main excretory organ? 4. Role of kidney in balancing water of blood.5.Why is dialysis done?

(c) 1.Structure of kidney and nephron . 3.Stone form in kidney-why? 4. Nephron is like a filter- explain.

(d) 1. Steps to be taken if kidney becomes disorder. 2.Role of osmoregulation in kidney?

Chapter-9 Firmness and Locomotion

(a) Synovial joint, osteoporosis, tendon , ligament, osteoblast, sarcolema, pericondrium, movable bone joint, lacunae, cartilage.

(b) 1.Role synovial fluid in movement of bone joint. 2. Why is elbow joint a hinge joint?
3. What do you mean by cartilage? 4. What do you mean by osteoporosis and arthritis?
5. Ca rich food is needed for elderly people- Why? 6. Difference between tendon and ligament.

(c,D)Role bone and muscle in human locomotion. 2. Draw a labeled diagram of synovial joint.
3. Functions of skeleton. 4. Explain the role of different bone joints.
5. How does bicep and tricep help in the movement of organs?

Chapter-10 Co-ordination

(a) Phytohormone, endocrine gland, geotropism, reflex action, neurilema,, axon, neuron, epilepsy paralysis, biological clock , peripheral nervous system, synapse, postulated hormone, meninges, myolin, feromone, dopdmin, cerebral hemisphere, phototropic movement.

(b)1. Islets of langerhans. 2. Pituitary is the master gland- Why? 3. Autonomic nervous system.
4. Role of feromone in controlling insects. 5. Daylength influences the flowering of plant- How?
6. Stem of a plant tends to sunlight at day- Why? 7. Hormone is called the chemical messenger- Why?
8. We cannot control the action of reflex action- Why? 9. Why is a neuron indivisible?
10. Difference between cerebrum and cerebellum. 11. What do you mean by vernalization?

(c,d)1. Symptoms of Parkinson. 2. How does reflex action occur? 3. Explain a neuron with diagram. 4. Write down the role of spinal cord. 5. Cause of diabetes disease. 6. Explain 3D to control diabetes. 7. Explain the structure of fore brain. 8. Role of different endocrine hormones.

Chapter-11 Reproduction in Organism

(a)Reproduction, monoecious and dioecious plant, pollination, blastosyst, AIDS, zygote, endosperm, double fertilization, inflorescence

(b)Self and cross pollination, mediums of pollination, parts of flower, importance of testosterone and estrogen, blastula, complete flower.

(c,d)Structure of a complete flower, Development of male and female gamete, Explain fertilization with diagram, development of embryo, placenta acts as along as well as a kidney.

Chapter-12 Heredity in Organism and Evolution

(a) DNA, chromosome, purine, pyrimidine gene, DNA replication, DNA test, thalasemia, natural selection, RNA.

(b)1. What do you mean by survival of the fittest? 2. What do you mean by beta thalasemia and colour blindness? 3. Why is DNA replication half conservative? 4. Chromosome is the physical basis of heredity- why?

(c,d) 1. Explain the process of DNA replication. 2. Explain the structure of DNA.
3. How is thalasemia transmitted into the child? 4. Function of chromosome to determine the gender of a child. 5. Criminals can be find out by DNA test- How? 6. Gene is the perfect master of heredity- How?

Chapter-13 Environment and Ecosystem

(a)Antibiosis, mutualism, food chain, scavenger, tropic level, plankton, decomposer, consumer, predator and parasitic food chain, omnivorous, food web, Biodiversity, lichen.

(b)1. Why are micro organisms decomposers? 2. Usefulness of the inorganic components of ecosystem. 3. Why is Hyena called scavenger?

(c,d) 1. Difference between predator/ parasitic food chain. 2. Explain food web with example.
6. Explain mutualism, commensalism, antibiosis, 7. Explain the ecosystem of a pond.

Chapter-14 Biotechnology

(a) Biotechnology, tissue culture, recombinant DNA, TMGMV, Bt cotton, genetic engineering, restriction and ligase enzyme, callus.

(b) 1.What do you mean by recombinant DNA technology? 2. What do you mean by GMO?
3. Culture media. 4. Steps of tissue culture. 4. Steps of preparing GMO.

(c,d) 1. Explain the steps of tissue culture. 2. Explain the steps of recombinant DNA preparation.
3. Write down the use of genetic engineering in different fields.

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