THE ASIAN SCHOOL, DEHRADUN

PRACTICE PAPERS SESSION 2017-18

CLASS 10 SUBJECT Biology CHAPTER- 1 Life Process

1	Fungi- Saprophytic nutrition, Amoeba- Holozoic nutrition $^1/_2+^1/_2$	1
2	Enzymes are the bio- catalysts that speed up the chemical reactions taking place in a living body.	1
3	Bile juice helps in emulsification of fats.	1
4	$6CO_2 + 12H_2O \xrightarrow[\text{Chlorophyll}]{\text{Sunlight}} C_6H_{12}O_6 + 6O_2 + 6H_2O$	1
5	Haemoglobin(present in RBC) transports O_2 and CO_2 in our body. Deficiency of haemoglobin would lead to anaemia that results in breathing problem and tiredness.	1
6	Resins and Gums $^1/_2+^1/_2$	1
7	The opening and closing of stomata is a function of guard cells. Movement of water into guard cells makes them swell, causing stomatal pore to open. Similarly, movement of water out of the guard cells makes them shrink, causing stomatal pore to close. $^1/_2+^1/_2$	1
8	When blood goes twice through the heart during each cycle of passage through the body, it is known as double circulation.	1
9	In multicellular organisms like humans, all the body cells are not in direct contact with the surrounding environment. Therefore, the rate of absorption and diffusion becomes very less. Multicellular organisms require greater amount of oxygen to sustain life processes which cannot be fulfilled by the process of diffusion. Thus, simple diffusion does not meet the requirements of all the cells. 1+ 1	2
10	Autotrophic Nutrition- It is a mode of nutrition in which autotrophs can prepare their own food with the help of inorganic substances such as Co_2 and water in the presence of chlorophyll and sunlight. Heterotrophic Nutrition- It is a mode of nutrition in which the organisms cannot prepare their own food from simple inorganic substances such as Co_2 and water. 1+1	2
11	*Amoeba* obtains its food with the help of pseudopodia(finger- like extensions of the cell surface) which fuse over the food particle forming a food- vacuole. In *Paramoecium* , the cell has a definite shape and food is taken in at a specific spot by the movement of cilia covering the entire surface of the cell. 1+1	2
12	Salivary amylase/ Ptyalin, it breaks down starch into maltose sugar. 1+1	2
13	Herbivores eating grass need a longer small intestine to allow the cellulose to be digested. Meat is easier to digest, hence carnivores like tigers have a shorter small intestine. 1+1	2
14	The intestinal juice secreted by the walls of small intestine contain enzymes which convert the proteins into aminoacids, complex carbohydrates into glucose and fats into fatty acids and glycerol. The inner lining of small intestine has numerous finger-like projections called villi which increase the surface area for absorption. 1+1	2
15	The pancreatic juice contains enzymes like trypsin for digesting proteins, and lipase for breaking down emulsified fats. $^1/_2$×4	2
16	The inner lining of small intestine has numerous finger-like projections called villi which increase the surface area for absorption of food. The villi are richly supplied with blood vessels which take the absorbed food to each and every cell of the body, where it is utilised for absorbing energy, building up new tissues and the repair of old tissues. 1+1	2
17	The alveoli of lungs provide a surface where the exchange of respiratory gases can take place. The walls of alveoli are thin and permeable to respiratory gases, and contain an extensive network of blood vessels for efficient exchange of gases. $^1/_2$x4	2
18	The loss of water in the form of water vapours from the aerial parts of the plant is known as transpiration.1 (i)Transpiration helps in the absorption and upward movement of water and minerals from roots to leaves. $^1/_2$ (ii) It helps in temperature regulation in plants. $^1/_2$	2
19	Fishes have two- chambered heart. The blood pumped to the gills, is oxygenated there, and passes directly to rest of the body. Thus, blood goes only once through the heart during one cycle of passage through the body(single circulation). $^1/_2$x4	2

20	Check figure 6.1, page 96 of NCERT. (6 labellings) ½ x 6	3
21	(i) Absorption of light energy by chlorophyll. 1 (ii) Conversion of light energy to chemical energy and splitting of water molecules into hydrogen and oxygen. ½ + $^1/_2$ (iii) Reduction of carbon dioxide to carbohydrates. 1	3
22	Stomata are the tiny pores present on the surface of leaves. 1 Stomata help in exchange of gases in plants. 1 Transpiration takes place through stomata. 1	3
23	Check figure 6.6, page No. 99 of NCERT (6 labellings) $^1/_2$x6	3
24	The gastric juice contains hydrochloric acid, an enzyme pepsin and mucus. The hydrochloric acid creates an acidic medium which facilitates the action of the enzyme pepsin. The Pepsin digests proteins, and the mucus protects the inner lining of the stomach from the action of the acid under normal conditions. $^1/_2$x6=3	3
25	(i) Aerobic Respiration- The first step is the break down of glucose(6-C molecule) into Pyruvate(3-C molecule) which takes place in the cytoplasm of the cell. Further, the pyruvate is converted into CO_2, water and a lot of energy is produced. This takes place in the presence of oxygen in the mitochondrion. 1 (ii) Anaerobic Respiration(in Yeast)- The first step is the break down of glucose(6-C molecule) into Pyruvate(3-C molecule) which takes place in the cytoplasm of the cell. Further, the pyruvate is converted into ethanol(2-C molecule) and CO_2. This takes place in the absence of oxygen and much less energy is produced. 1 (iii) Anaerobic Respiration in human muscle cells- When there is a lack of oxygen in our muscle cells, the first step is the break down of glucose(6-C molecule) into Pyruvate(3-C molecule) which takes place in the cytoplasm of the cell. Further, the pyruvate is converted into Lactic acid(3-C molecule). This takes place in the absence of oxygen and much less energy is produced. This build- up of Lactic acid in our muscles during sudden activity cause cramps. 1 Or Check figure 6.8, Page No. 102 of NCERT (diagram showing three reactions) = 1x3	3
26	Check figure 6.10, Page No. 106 of NCERT (6 labellings) $^1/_2$x6	3
27	(a) Since the blood emerges from the heart under high pressure, the arteries have thick, elastic walls. 1 (b) To keep oxygenated and deoxygenated blood from mixing, which allows a highly efficient supply of oxygen to the body. Being warm- blooded, we constantly use energy to maintain our body temperature. 1 (c)If the distances between soil- contacting organs and chlorophyll- containing organs are large because of changes in plant body design,diffusion processes will not be sufficient to provide raw material in leaves and energy in roots. A proper system of transportation is therefore essential in such situations. 1	3
28	In plants, transport of water and minerals takes place through Xylem tissue. In Xylem tissue, vessels and tracheids of the roots, stems and leaves are interconnected to form a continuous system of water-conducting channels reaching all parts of the plant. The root hairs are directly in contact with the film of water in between the soil particles. Water goes into the root hairs by the process of diffusion. At the roots, cells in contact with the soil actively take up ions. This creates a difference in the concentration of these ions between the root and the soil. Water, therefore, moves into the root from the soil to eliminate this difference. This means that there is steady movement of water into root xylem, creating a column of water that is steadily pushed upwards. Also, water is lost from the aerial parts of the plant(transpiration). Evaporation of water molecules from the cells of the leaf creates a suction which pulls water from the xylem cell of roots(transpiration pull). $^1/_2$×6	3
29	In plants, food prepared in leaves is translocated through phloem tissue (sieve tubes)to other parts. Food is transported to different parts of plant in the form of solution through sieve tubes. The end walls of sieve tubes are connected with each other by perforated sieve plates, forming a continuous passage from root tips to stem tips through which dissolved food substancesmove freely. This is achieved by utilising energy. Material like sucrose is transferred into phloem tissue using energy from ATP. This increases the osmotic pressure of the tissue causing water to move into it. This pressure moves the material in the phloem to tissues which have less pressure. This allows the phloem to move material according to the plant's needs. $^1/_2$×6	3

<table>
<tr><td>30</td><td>The main components of transport system in human beings are Heart, Blood and Blood Vessels(Arteries, Veins and Capillaries). Heart pumps the blood to different body parts.
Blood consists of a fluid medium called Plasma in which the cells are suspended. Plasma transports food, CO_2 and nitrogenous wastes in dissolved form. Red Blood Cells transport respiratory gases and hormone, White Blood Cells protect the body from infections and Platelets help in clotting of blood at the time of injury.
Blood Vessels- Arteries- carry oxygenated blood from heart to different organs of the body.
Veins- carry deoxygenated blood from different body parts to heart.
Capillaries- exchange of materials between blood and living cells through tissue fluid. $^1/_2\times6$</td><td>3</td></tr>
<tr><td>31</td><td>Oxygen can be thought of as a waste product generated during photosynthesis in plants. Plants can get rid of excess water by transpiration. For other wastes, plants use the fact that many of their tissues consist of dead cells, and that they can even lose some parts such as leaves. Many plant waste products are stored in cellular vacuoles. Waste products may be stored in leaves that fall off. Other waste products are stored as resins and gums, especially in old xylem. Plants also excrete some waste substances into the soil around them. $^1/_2$x3</td><td>3</td></tr>
<tr><td>32</td><td>(a) Check figure 6.13, Page No. 110 of NCERT (6 labellings) $^1/_2\times6=3$
(b) Glucose, aminoacids, salts and a major amount of water. $^1/_2\times4=2$</td><td>5</td></tr>
<tr><td>33</td><td>(a) Check figure 6.9, Page No. 104 of NCERT (6 labellings) $^1/_2\times6=3$
(b) Aerobic Respiration- It takes place in the presence of oxygen/It involves complete oxidation of food/It produces CO_2 and water/ It produces great amount of energy(38 ATP).
Anaerobic Respiration- It takes place in the absence of oxygen/ It involves partial breakdown of food/ It may produce Ethanol and CO_2 (in yeast) or Lactic acid (in human muscles or bacteria)/ It produces much less energy(2ATP). $^1/_2\times4=2$</td><td>5</td></tr>
<tr><td>34</td><td>(a) Check figure 6.11, Page No. 106 of NCERT (6 labellings) $^1/_2\times6=3$
(b) Arteries- carry oxygenated blood from heart to different body parts/ thick- walled/ do not have valves/ blood flows under high pressure and high speed/deep- seated in our body.
Veins- carry deoxygenated blood from different body parts to the heart/ thin- walled/ have valves/ blood flows under low pressure and low speed/ superficially placed in our body. (any 4 relevant points) $^1/_2\times4=2$</td><td>5</td></tr>
<tr><td>35</td><td>(a) Check figure 6.14, Page No. 111 of NCERT (6 labellings) $^1/_2\times6=3$
(b)
<table>
<tr><td>PARTS</td><td>STRUCTURE</td><td>FUNCTION</td></tr>
<tr><td>Alveoli of lungs</td><td>Balloon-like</td><td>Exchange of respiratory gases</td></tr>
<tr><td>Nephrons in the kidney</td><td>Highly coiled tubular structures</td><td>Filteration of blood</td></tr>
</table>
$^1/_2\times4=2$</td><td>5</td></tr>
</table>

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CLASS 10 SUBJECT Biology CHAPTER- 2 Control And Coordination

Ans1	Auxins (1)	1
Ans2	Auxins/ Gibberellins/ Cytokinin (Any one) (1)	1
Ans3	Photoreceptor and phonoreceptors(½ + ½ =1)	1
Ans4	Insulin (1)	1
Ans5	Cerebellum (1)	1
Ans6	**Synapse** is a very fine gap between the nerve ending axon of one neuron and dendrites of another neuron. (1)	1
Ans7	**Hormones**: Are the chemical messengers which control and co-ordinate different functions of the body. (1)	1
Ans8	With the help of hormones. (1)	1
Ans9	Neuron. (1)	1
Ans10	ABA (Abscisic Acid) (1)	1
Ans11	Receptors are the cells present in sense organs which receive the external stimuli. (1)	1
Ans12	Tropism is the ability of an organism to turn or move in response to a stimulus (½X4=2) Type of Tropism: Phototropism chemotropism, Thigmotropism, Hydrotropism, Geotropism (any 3 types)	2
Ans13	The movement of plant part in response to touch is called thigmotropism. E.g.:The growth movement of tendrils in response to unilateral stimulus of touch. (1+1=2)	2
Ans14	a) Dendrites b) Axon (1+1=2)	2
Ans15	Iodine is a constituent of thyroxin Iodized salt provides sufficient iodine for thyroxin formation otherwise the deficiency of thyroxin develops a disorder called goiter. (2)	2
Ans16	Movement in the leaves of sensitive plant (*Mimosa pudica*) occurs due to turgor changes in the cells which causes drooping of leaves/ leaflets while movement of a shot towards lights is a phototropic movement that is caused due to differential growth that occurs due to move concentration of auxins in one side. (2)	2
Ans17	Their bodies have to prepare for either fighting or running away Both are very complicated activities that will use a great deal of energy in controlled ways. Many different tissue type will be used and their activities integrated together in these action. (2)	2
Ans18	Function of : Testosterone: 18 to control the development of male sex organs and male features such as deeper voice, , beard etc. Estrogen: To control the development to female sex organ, and female feature such as famine voice, soft sin etc. (1+1=2)	2
Ans19	Function of medulla oblongata are control breathing, heartbeat, vomiting and secretary activities of digestive tract. (1+1=2)	2
Ans20	Function of spinal cord is control reflex activities and transmits impulses to and from the brain. (1+1=2)	2
Ans21	<table><tr><th>Reflex Action</th><th>Walking</th></tr><tr><td>a) It is the immediate response of the spinal cord to a sudden impulse</td><td>a) Walking is a voluntary action which is controlled</td></tr><tr><td>b) It is conducted by the spinal cord.</td><td>b) It is controlled by hindbrain (bycerebellum)</td></tr><tr><td>c) It occurs in a fraction of seconds</td><td>c) It takes longer time.</td></tr></table>(1+1=2) (any two point)	2
Ans22	<table><tr><th>Tropic Movement</th><th>Nastic Movement</th></tr><tr><td>a) Movements by internal stimulus coming from one direction only</td><td>a) Movement due to turgor changes in the cells.</td></tr><tr><td>b) It is a growth movement</td><td>b) It is not a growth movement.</td></tr></table>(1+1=2) (any two point)	2
Ans23	The movement of tendril around the support is caused by the auxin hormones. Less auxin occurs on the side of contact as compared to the free side. Auxin promote the growth on the free sides. As a result of a growth on the free side, the tendril coils around the support.	2

Ans24	NCERT Book Page No. 115 figure (a) structure of neuron	3
Ans25	Reflex actions, in short, are the quick action. Its advantages are: - 1. The message takes less time to move from receptor to effector it would have required longer duration for us to react, which has potential to cause damage to body tissue 2. Thus, the load on brain is also reduced 3. Efficiency of spinal cord is increased.	3
Ans26	Three functions of fore brain are : a) It is the site of learning, intelligence. b) Personality and memory c) Controls movement d) Control sensation and action. (1+1+1=3) (any three point)	3
Ans27	Function of hindbrain : a) Maintaining posture and balance of the body. b) Coordinate smooth body movement such as walking, dancing etc. c) Control involuntary action such as breathing blood pressure heart beat. (1+1+1=3)	3
Ans28	Reflex Action: A reflex action I defined as a spontaneous, automatic and mechanical response to a stimuliwithout the will of an individual. In such action there is no involvement of the brain. Eg: Hot plate (Stimulus) Receptors → Sensory Neuron Response effectors ← Motor Neutron ← Spinal Cord	3
Ans29	NCERT Book page 118 fig 7.3.	3
Ans30	Activity show phototropism in plant the directional movement of a plant part/ plant in response to light is called phototropism.	3
Ans31	It is so important that hormones should be secreted in precise quantities, and the timing and amount of hormone released are regulated by feedback mechanisms. Eg : If the sugar levels in blood rise, they are detected by the cells of the pancreases which respond by producing more insulin. As the blood sugar level falls insulin secretion is reduced. (1½+1½=3)	3
Ans32	Phytohormones: They are chemical which regulate plant growth. They are four types. a) Auxins: Help in promote cell enlargement and cell differentiation. b) Gibberellins: Help in breaking the dormancy in seeds and buds. c) Cytokinin: Promote cell division and delay the ageing in leaves. d) Abscisic Acid: Promotes the wilting and falling of leaves. (1+1+1+1+1=5)	5
Ans33	a) Estrogen b) Growth hormones c) Parathormone Hormones d) Thyroxine e) Insulin (1+1+1+1+1=5)	5
Ans34	a. Adrenalin: Help in speeds up hart beat and breathing, raise blood pressure. b. Testosterone: control and development of male sex hormones. c. Thymus hormones: Development of the immune system of the body. d. Parathyroid hormones: Regulate calcium and phosphate level in the blood. e. Estrogen: Control development of female sex organ and female feature.	5

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CLASS 10 SUBJECT Biology CHAPTER- 3 How Do Organisms Reproduce

Ans1	a) AIDS : Acquired Immune Deficiency Syndrome (½) b) STD's : Sexually Transmitted Diseases. (½)	1
Ans2	a) IUCD : Intra Uterine Contraceptive Device (½) b) HIV : Human Immunodeficiency Virus (½)	1
Ans3	Binary Fission	1
Ans4	i) Amoeba : Binary Fission (¼) ii) Planaria : Regenertion (¼) iii) Yeast : Budding (¼) iv) Bryophyllum : Vegetative Propagation (¼)	1
Ans5	Errors in DNA copying (Variations)	1
Ans6	Because errors in DNA copying led to variations which not only gives survival advantage to an organism but also leads to evolution.	1
Ans7	Vagina.	1
Ans8	Urethra form a common passage for both sperm and urine.	1
Ans9	Because the flowers may contain either stamen or carpels. `	1
Ans10	Copper – T. It is placed inside Uterus. (½ +½)	1
Ans11	Because in asexual reproduction only single parent is involved due to which variations during DNA copying doesn't occurs, producing identical progeny genetically.	1
Ans12	Vasectomy: It is done in human males, where the vas deferens in cut and tied by surgery to block the passage of sperms. (1+1=2) Tubectomy : It is done in human females, where the fallopian tubes are cut and tied by surgery to block the passage of ovum.	2
Ans13	Sperm : it is motile and carry X and Y chromosome. (½) Ovum : It is non- notile and carry X and X chromosome. (½) Motility of sperm allow the sperm to reach the egg for fusion. (1)	2
Ans14	a) In sexual reproduction fusion of male and female gametes takes place, these germs cells/ gametes contain half the number of chromosomes compared to non- reproducing body cells. (1) b) When the male and female gametes fuses at the time of fertilization, it restores the original number of chromosomes (of the parents) ensuring the stability of species. (1)	2
Ans15	The oral pills either stops the process of ovulation or either makes Uterine environment unsuitable for the process of implantation, thus prevents pregnancy. (1+1)	2
Ans16	Refer fig 8.4 of NCERT Textbook.	2
Ans17	a) DNA copying is essential for formation of additional cellular apparatus, so that when DNA copies separate, each cell gets its own cellular apparatus. (1+1) b) The process of DNA copying results in variations each time. As a result the DNA copies generated will be similar, but may not be identical to the original.	2
Ans18	a) Seminal Vesicles : It secretes alkaline secretions which lowers the pH of the semen and provide nourishment. (1+1) b) Prostate gland: The secretions of this gland keep the sperm active and mobile in an alkaline secretion.	2
Ans19	Pollen grains falls on the Stigma, pollen tube formed carrying male gamete through style, reaches the ovary. Ovary contains ovular/egg cell. The male gamete fuses with the female gamete (egg cell) present in the ovule. Zygote formed after fertization that divides to form seed.	2
Ans20	Embry of seed contains : Rodicle and Plumule. (½+½) Plumule gives rise to shoot of the plant and Radicle gives rise to root of the plant on germination. (1)	2
Ans21	Reproductive Organ : Releases egg or female gamete . (1) Endocrine gland : Secretes Estrogen and Progesterone hormones. (1)	2

<table>
<tr><td>Ans22</td><td>a) Process of Menstural Cycle starts. (½)
b) Development of breast (mammary glands) (½)
c) Broadning of lower abdominal region. (½)
d) Development of pubic hairs etc. (½)</td><td>2</td></tr>
<tr><td>Ans23</td><td><table><tr><th>Sexual Reproduction</th><th>Asexual Reproduction</th></tr><tr><td>a) Two parents are involved</td><td>a) Single parents is involved (½)</td></tr><tr><td>b) Formation of gametes takes place</td><td>b) No gametes are formed (½)</td></tr><tr><td>c) Variations are produce in progenies</td><td>c) No such variations occurs here . (½)</td></tr><tr><td>d) Occurs mostly in all higher organisms.</td><td>d) It is restricted to some lower organisms only (½)</td></tr></table></td><td>2</td></tr>
<tr><td>Ans24</td><td>a) Prevention from STD's. (1+1)
b) Prevents entry of sperms in female genital tract.</td><td>2</td></tr>
<tr><td>Ans25</td><td>Pollination : Transfer of pollen grains from anther to the stigma of a flower. 1
Self Pollination : Transfer of pollen grains from anther to the stigma of the same flower or different flower of the same plant. (½)
Cross Pollination : Transfer of pollen grains from anther of a flower to the stigma of flower growing on different plant. (½)</td><td>2</td></tr>
<tr><td>Ans26</td><td>Chromosomes in :
a) Egg nucleus – 12 (½)
b) Zygote : 24 (½)
c) Endosperm – 36 (½)
d) Leaf Cell – 24 (½)</td><td>2</td></tr>
<tr><td>Ans27</td><td>Refer Diag given in Lab- Manual activity. (2)</td><td>2</td></tr>
<tr><td>Ans28</td><td>Species that reproduces sexually have better chances of survival due to variations produced during DNA copying while in case of organisms reproducing asexually there occurs no variations making them more vulnerable in the ever changing environment. (2)</td><td>2</td></tr>
<tr><td>Ans29</td><td>Population control, unwanted pregnancies, avoid spread of STD's etc. (1+1)</td><td>2</td></tr>
<tr><td>Ans30</td><td>Pollination : It is a pre fertilization physical phenomena where pollen grains are transferred from anther to the stigma of a flower. (1)
Fertilization : It is a post- pollination, physiological phenomena where fusion of male and female gametes occurs to form seed inside ovary of a flower. (1)</td><td>2</td></tr>
<tr><td>Ans31</td><td>Bacterial - Gonorrhoea (½)
Viral – AIDS (½)
These can be prevented by using physical barrier methods like condoms and Diaphrams during sexual act. (1)</td><td>3</td></tr>
<tr><td>Ans32</td><td>Planaria gets cut into many pieces, each pieces grows into separate individual. (1½)
Regenration is not the same as reproduction, as most of the organisms would not normally depend on being cut up to be able to reproduce. (1½)
(It is normally for repair of the damaged part)</td><td>3</td></tr>
<tr><td>Ans33</td><td>Refer fig. 8.1 of NCERT Textbook.</td><td>3</td></tr>
<tr><td>Ans34</td><td>a) Physical Barrier methods like – Condoms and diaphragms (1)
b) Chemical methods like using – contraceptive pills. (1)
c) Intra Uterine contraceptive devices like – Copper –T (1)</td><td>3</td></tr>
<tr><td>Ans35</td><td>i) Ovary – It produces female gamete i.e. ovum. (1)
ii) Fallopian Tube – It serves as a site of fertilization.
iii) Uterus – It serves as womb where development of embryo takes place. (1)
iv) Vagina – It acts as an opening to receive the male external genitalia ie.- Penis. (1)</td><td>3</td></tr>
<tr><td>Ans36</td><td>i) Scrotum : Sac like Structure provides protection to Testis and Maintain lower temperature than body. (1)
ii) Testes : Produces sperms and male sex hormone- Testosterone. (1)
iii) Vas Deferens : Transfer male gametes from Testes towards – Urethra. (1)</td><td>3</td></tr>
<tr><td>Ans37</td><td>If the egg is not fertilized in human female, then process of Menstruation occurs i.e – (3)
the uterine lining disintegrates and is discharged through the vaginal region in the form of bleeding.</td><td>3</td></tr>
</table>

Ans38	Special tissue connecting the growing embryo with the maternal blood/ tissues is called Placenta. (1) Functions : a) It helps in providing nutrition and oxygen to the developing embryo. (1) b) It removes the wastes like CO_2 etc from the developing embryo. (1)	3
Ans39	a) Ovulation : Process of release of ovum from ovary in the middle of Menstrual cycle. (1) b) Implantation : Attachment of developing embryo with the Uterine lining of Mother. (1) c) Spore Formation : These are specific reproductive structures formed during unfavourable conditions in asexual reproduction in organisms like – Rhizopus. (1) d) Menstruation : It is the discharge of disintegrated Uterine lining in the form of bleeding from Vagina when the egg remains unfertilized. (1) e) Gestation : it is the duration from fertilization to development of embryo into a fully grown foetus till its delivery. (1)	5
Ans40	a) Refer fig – 8.11 of NCERT textbook. i) Ovary (Egg Develops) (1) ii) Fallopian Tube/ Oviducts (Fertilization takes place) (1) iii) Uterus (Fertilized egg gets implanted) (1) b) . i) The inner lining of the uterus thickens and is richly supplied with blood. (1) ii) The inner lining slowly breaks and comes out through the vagina as blood and mucous (menstruation) (1)	5
Ans41	a) Refer Fig 8.7 of NCERT Textbook (3) b) i) Ovary becomes fruit (½) ii) Ovules turns into seeds. (½) iii) Sepals gets dry, shrivel and fall off. (½) iv) Petals gets dry, shrivel and fall off (½)	5
An42	a) Refer fig 8.8 of NCERT Textbook. (3) b) The desire for male child had lead to situation where sex ratio is declining in our country. (2) Incidences of female foeticide had also increased this problem of declining sex ratio in India.	5
Ans43	a) Refer fig. 8.10 of NCERT Textbook. (3) b) Testes are located outside the abdominal cavity in human males because the spermatogenesis i.e- production of sperms require 2-3^{0}C lower temperature than body temperature. (2)	5

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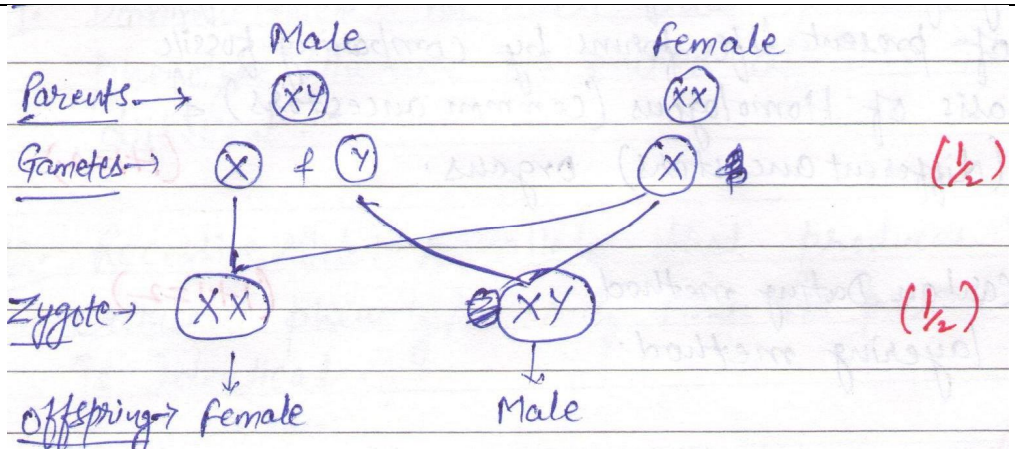
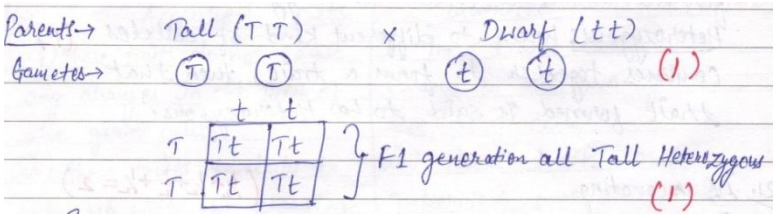
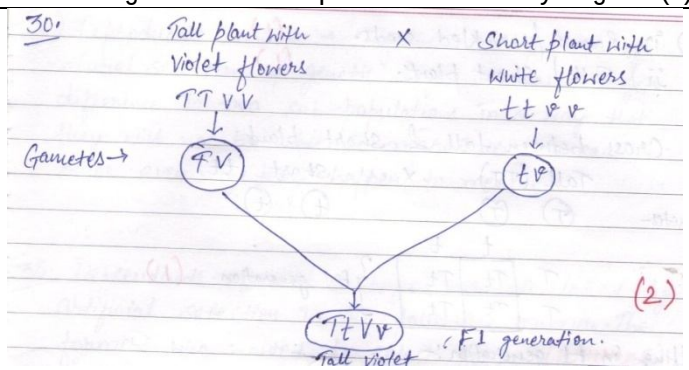
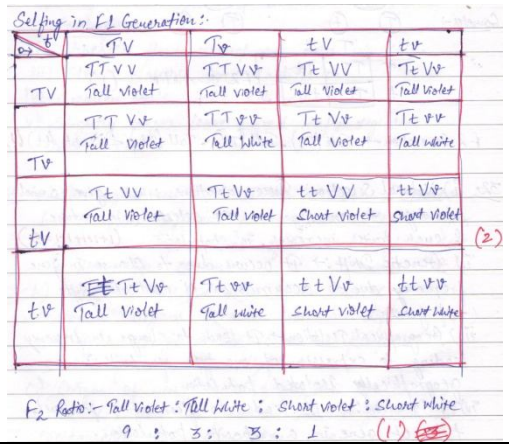
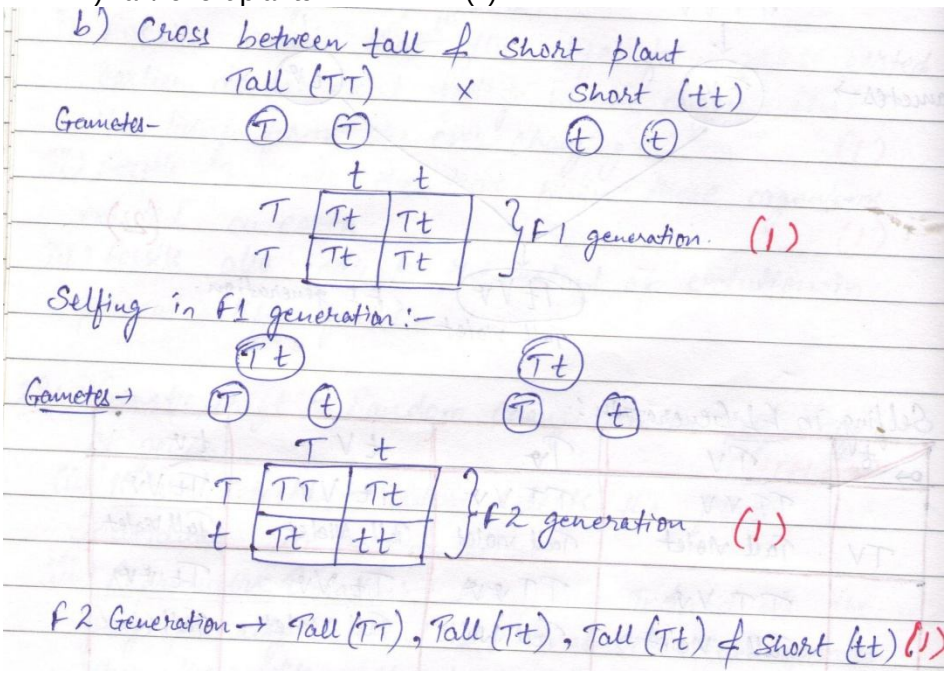
CLASS 10 SUBJECT Biology CHAPTER- 4 Heredity and Evolution

<table>
<tr><td>Ans1</td><td>Heredity : Transmission of characters from parents to their offsprings.</td><td>1</td></tr>
<tr><td>Ans2</td><td>Evolution : It is the gradual unfolding of events by which new organisms evolved from pre-existing organisms through changes since the beginning of life.</td><td>1</td></tr>
<tr><td>Ans3</td><td>Study of Heredity and variations is known as Genetics. Gregor Johann Mendel is the father of Genetics.</td><td>½+ ½</td></tr>
<tr><td>Ans4</td><td>Gene is a segment of DNA on a chromosome occupying specific position and thus it is considered as a unit of specific biological function.</td><td>1</td></tr>
<tr><td>Ans5</td><td>Lamarck.</td><td>1</td></tr>
<tr><td>Ans6</td><td>Charles Darwin.</td><td>1</td></tr>
<tr><td>Ans7</td><td>Because acquired traits are produced after birth of an organism. Depending upon the experiences and interaction with their environment.</td><td>1</td></tr>
<tr><td>Ans8</td><td>It is the occurrence of differences among the individuals.</td><td>1</td></tr>
<tr><td>Ans9</td><td>Study of evolutionary history and relationships among Individuals or groups of organisms.</td><td>1</td></tr>
<tr><td>Ans10</td><td>Genetic Drift : Random change in the frequency of genes.</td><td>1</td></tr>
<tr><td>Ans11</td><td>Dominant Allele : An allele that produces the same phenotype whether its paired allele is identical or different.</td><td>1</td></tr>
<tr><td>Ans12</td><td>Recessive Allele : An allete that produces its characteristics phenotype only when its paired allele is identical.</td><td>1</td></tr>
<tr><td>Ans13</td><td>Ammonia, Methane, Hydrogen Sulphide and Water.</td><td>¼+ ¼+¼+¼</td></tr>
<tr><td>Ans14</td><td>In animals like – Snail, Lizard etc.</td><td>1</td></tr>
<tr><td>Ans15</td><td>Variations provides a substrate for process of Natural selection to act on. Selection can only act on existing heritable variations. Thus leaving fittest organism to survive and helps in process of evolution.</td><td>2</td></tr>
<tr><td>Ans16</td><td><table><tr><th>Acquired Traits</th><th>Inherited Traits</th></tr><tr><td>a) These traits do not cause any changes in the DNA of the germ cells.</td><td>a) These traits cause a change in the DNA of the germ cells.</td></tr><tr><td>b) These traits develops to cope up with the changing environment and are not heritable, thus cannot direct evolution.</td><td>b) These traits are inherited over generations and can direct evolution.</td></tr></table></td><td>2</td></tr>
<tr><td>Ans17</td><td>By observing fossils we can find out the extent of evolution of present life forms by comparing fossils on the basis of Homologous (Common ancestors) and Analogous (different ancestors) organs.</td><td>1+1=2</td></tr>
<tr><td>Ans18</td><td>a) Radio carbon dating method.
b) Relative layering method.</td><td>1+1=2</td></tr>
<tr><td>Ans19</td><td>Genotype : It can be defined as genetic makeup of an organism which cannot be observed by observing physical characters. It is independent of environment.
Phenotype : It is the physical appearance of any organism which can be observed by viewing morphologically. It depends on Genotype as well as on environment.</td><td>1+1=2</td></tr>
<tr><td>Ans20</td><td>Homozygous: When two same kinds of alleles combines together to form a trait, then that trait formed is said to be homozygous.
Hetrozygous: When to different kind of alleles combines together to form a trait, then that trait formed is said to be Heterozygous.</td><td>1+1=2</td></tr>
<tr><td>Ans21</td><td>a) Excavating
b) Time Dating
c) Studying Fossils
d) Determining DNA sequences</td><td>½+½+½+½=2</td></tr>
</table>

Ans22	 Since the sperm carrying X- chromosome and sperm carrying Y- chromosome have equal/ 50-50 chance of fertilizing an egg, thus it is a matter of chance whether a couple will give birth to a male or a female child.	3
Ans23	Law of Dominance: Only the dominant traits are expressed in F-1 generation. Explanation : Let us cross a homozygous tall (TT) pea plant with a homozygous Dwarf (tt) pea plant.  Thus in F_1 generation all of the progenies are tall Heterozygous following Mendel's law of dominance.	3
Ans24	a) Variations increase adaptations and promotes natural selections. b) Natural selection selects the Individuals having useful variations which ensures their survival in the prevailing conditions of environment. c) Variant individuals that can withstand or cope with prevailing environment will survive better and will increase in number through differential reproduction.	1+1+1=3
Ans25	Evolution is simply generation of diversity and the shaping of diversity by environmental selection. In evolution progress occurs in increasing more and more complex body design emerged over time. Meanwhile some of the species like bacteria is still having simple body design and is surviving in most inhospitable habitats unlike other complex organisms. Thus Evolution cannot be equated with progress.	3
Ans26	A change that is useful for one property to start with can become useful for quite a different function for example : feathers are thought to have been initially evolved for warmth and later adopted for flight.	3
Ans27	Fossils are the impressions or remains of ancient life found present in sedimentary rocks or in soil. (1) Information's given by fossils : a) Fossils reveal that the life form which existed earlier do not exist today which suggests that the living forms are ever changing. (1) b) Fossils indicate the time when these organisms existed on earth. (1) c) Fossils also indicate the extent of evolution in present life forms.	3
Ans28	a) Genetic Drift : Random change in the frequency of genes. (1+1+1 =3) b) Natural Selection : Nature selects the fittest individual in a population. c) Reproductive Isolation: When two individuals are geographically isolated and natural selection operates upon them differently leading to inability of the individuals to interbreed.	3
Ans29	a) The function of feathers initially was to provide insulation but later on they became useful for flight in birds only. Similarly, some dinosaurs had feathers, although they could not fly using the feathers. Birds seem to have later adopted the feathers to flight. This, of course shows that birds are very closely related to reptiles, since	3

	dinosaurs were reptiles. (2) b) The structure of the eye in each of the organisms is different. This indicates that, these organisms have separate evolutionary origins. (1)	
Ans30	 	5
Ans31	a) I) Round/ wrinkled seeds (1) ii) Tall/ Short plants (1)  1	5
Ans32	i) Natural selection : Those variations which give survival advantage to an organism are selected in nature and such traits increases in population. (1+1+1+1+1=5) ii) Genetic Drift : It occurs due to change in gene frequency due to accumulation of particular type of genes.. iii) Geographical Isolation : It leads to change in frequency leading to expression of one type of traits in a geographically isolated population. iv) Migration : It leads to flow of a particular type of gene in a specific population. v) Reproductive Isolation : Together the process of natural selection and genetic drift will cause larger difference in two sub-populations in a way that they will not be	5

	able to reproduce with each other even if they happen to meet.	
Ans33	Descendants of wild cabbage were developed by artificial selection in the following manner. The farmers who wanted to select for : (1+1+1+1+1=5) a) Very short distances between leaves, bred cabbage. b) Arrested flower development, bred broccoli. c) Swollen parts, bred Kohlrabi. d) Slightly larger leaves bred leafy vegetable called Kale.	5
Ans34	a) The organs which are similar in origin and structure but perform different functions are called Homologous organs. For example : Limbs of Humans and wings of bats are Homologous organs. (2) b) Wings of birds and wing of an insects are analogous organs because both are different in their origin and structure but performed similar function ie. Flight. (1) c) Origin of new species from the pre-existing one is called as speciation. The two factors responsible for speciation are : (1) i) Genetic Drift ii) Natural Selection (½ +½ = 1)	5

THE ASIAN SCHOOL, DEHRADUN

PRACTICE PAPERS SESSION 2016-17

CLASS 10 SUBJECT Biology CHAPTER- 5 Our Environment

<table>
<tr><td>Ans1</td><td>So that they can be easily differentiate at the time of their disposal. (1)</td><td>1</td></tr>
<tr><td>Ans2</td><td>Chlorofluorocarbons (CFCs) (1)</td><td>1</td></tr>
<tr><td>Ans3</td><td>Two biotic component : Plant and animals (½+½=1)</td><td>1</td></tr>
<tr><td>Ans4</td><td>Biomagnifications (1)</td><td>1</td></tr>
<tr><td>Ans5</td><td>Green plants called producer because they prepare their own food with the help of photosynthesis. (1)</td><td>1</td></tr>
<tr><td>Ans6</td><td>By promoting organic farming. (1)</td><td>1</td></tr>
<tr><td>Ans7</td><td>Decomposers: They are the micro-organism which breaks down the complex organic compounds present in dead organisms like dead plants and animals into simpler substance.
• Help in cleaning the environment.
• Help in replenishment of mineral with the help of Geological Cycle. (1+½+½=3)</td><td>2</td></tr>
<tr><td>Ans8</td><td><table><tr><th>Food Chain</th><th>Food Web</th></tr><tr><td>a) It is a process of eating and being eaten to transfer food energy</td><td>a) The network formed by various food chains after getting interconnected with each other.</td></tr><tr><td>b) It is having 4-5 populations of different species</td><td>b) It is having numerous population of different species.</td></tr><tr><td>c) Do not help in increasing population of endangered species</td><td>c) Helps in increasing the population of end angered species.</td></tr></table>(1+1=2)(Any two points)</td><td>2</td></tr>
<tr><td>Ans9</td><td>The advantages of using disposable Paper cups over disposable plastic cups
• Paper cup can easily decompose as compare to plastic cups.
• Paper cup does not harm the environment but plastic cups harm the environment. (1+1=2)</td><td>2</td></tr>
<tr><td>Ans10</td><td>Four adverse effect of ozone depletion on our health. (½+½+½+½=2)
a) Causes disease like cataracts
b) Low immune system
c) Cause skin cancer (melanoma)
d) Alter the Genetic material</td><td>2</td></tr>
<tr><td>Ans11</td><td>Industrialization is the one of the main cause of deterioration of environment. (½+½+½+½=2)
a) It leads to deforestation
b) It pollutes the environment by dumping
c) It leads to loss of biodiversity
d) Affects the livelihood of the people.</td><td>2</td></tr>
<tr><td>Ans12</td><td>Ozone is a triatomic gas (O_3) Found throughout the atmosphere, but most highly concentrated in the stratosphere, between 10 and 50 km above sea level, where it is known as the ozone layer the formation of ozone layer permitted the evolution of land born species as most of the harmful UV-radiation were absorbed by ozone which into formed molecular and free O_2.(1+1=2)</td><td>2</td></tr>
<tr><td>Ans13</td><td>a) Consumer
b) 10J (1+1=2)</td><td>2</td></tr>
<tr><td>Ans14</td><td>The number of tropic levels in a food chain is limited because at each tropic level in a food chain, a large portion of the energy is utilized for the maintenance of organism which occur at that tropic level and lost as heat as a result of this organism in each tropic level pass on less and less energy to the next tropic levels, than they receive.
The longer the food chain, the less is the energy available to the final member of food chain. (2)</td><td>2</td></tr>
<tr><td>Ans15</td><td>Energy flow in a food chain is unidirectional. In a food chain the energy moves progressively through the various trophic levels, it is no longer available to the previous level (autotrophs) and the energy captured by the autotrophs does not go back to the solar input.
Harmful chemical enter in our body through biomagnifications. (2+1+3)</td><td>3</td></tr>
<tr><td>Ans16</td><td>A self sustaining functional unit consisting of Biotic and Abiotic component is called an ecosystem.</td><td>3</td></tr>
</table>

	The two components of ecosystem are : a) Biotic Component: Biotic component contain living organism they include plants, animals, microorganism and human being. It has various categories like producer consumer and decomposer. b) Abiotic Component:Non-living components deal with the quality and nature of physical and chemical factors such as light, water, soil, air, O_2 and other nutrients. (1+2=3)	
Ans17	a) i) Use of different / Separate dustbin for degradable and on bio-degradable waste generated in class rooms. ii) By setting up a waste water treatment plant inside the school campus. b) The show love and care for their environment. (2+1=3)	3
Ans18	(i) UNEP: United Nations Environment Programmers CFCS : Chlorofluorocarbons (CFCs) (ii) Organisms can begrouped as producer, consumers and decomposers on the basis of their obtaining mode of nutrition. (iii) An aquarium is an artificial and incomplete ecosystem in contrast to a pond or lake which is natural. Self sustaining and complete ecosystem. In natural ecosystem decomposers help in recycling waste. But in aquarium needs to b cleaned regularly. (2+1+1+1=5)	5
Ans19	a) Omnivores b) Decomposers c) Producers d) Food Web e) Biological Magnification (1+1+1+1+1=5)	5

THE ASIAN SCHOOL, DEHRADUN

TEST PAPERS SESSION 2017-18

CLASS 10 SUBJECT Biology CHAPTER- 6 Management of Natural Resources

Ans1	a) Empty Jan or Pickle Bottles b) Paper can be recycled easily $^1/_2 + ^1/_2 = 1$	1
Ans2	a) Due to excessive use of natural resources they are depleting at faster rate and facing the danger of complete exhaustion. b) Excessive use of nature resource has created a problem of environment pollution. (any two point) $^1/_2 + ^1/_2 = 1$	1
Ans3	a) Storage of rainwater. b) To minimize the wastage water a preventing the leakage from taps. $^1/_2 + ^1/_2$	1
Ans4	Coliform bacteria.	1
Ans5	It is a biogeographic region which is a significant reservoir of biodiversity.	1
Ans6	Restoring ecological balance.	1
Ans7	Dust and coal particles mix with air which cause air pollution and respiratory problems.	1
Ans8	Watershed management emphasizes scientific soil and water conservation in order to increase the biomass production. Advantage : a) The main aim is to develop primary resources of land and water. b) It increases the life of the downstream dam reservoirs. 1+½+½	2
Ans9	The variety of plant and animal life in the world or in a particular habitat, a high level of which is usually considered to be important and desirable. Advantage of Conserving forest and wildlife : a) It maintains balance between abiotic and biotic factor of the environment. b) Provide us many product in the form of food, medicine etc. 1+½+½	2
Ans10	Affluent lifestyle has increased various comforts in life of people. Rapid manufacturing and usage of electronic goods utilizes lot of electricity. This depletes fossil fuels required for product of electricity. Increase in automobile industry to provide luxurious life style is a main cause of utilization of fossil fuels like petroleum and natural gas. 1+1	2
Ans11	a) Switch off the fans and bulbs when not in used. b) Reuse of paper, polythene bags etc . c) Reduce the wastage of water or paper. d) Repairing leaky taps to save water ½ +½+½+½	2
Ans12	It is necessary to sustain the resources for future generation and current basic needs of the population. Reuse is a better practice because it can be done at house hold level with no expense of energy. It does not cause pollution and is an eco-friendly practice.	2
Ans13	For advantages of stored ground water : a) It is less polluted as it is not exposed to humans and animals for contamination. b) It is fit for drinking as it is a source of fresh water. c) It is used for irrigation with the help of tube wells. d) It can be used throughout the year in dry seasons when most of the surface water gets evaporated. (any two points) ½+½+½+½	2
Ans14	Stakeholder are the group a person or organization that has interest or concern direct or indirect in forests. They are : Local People Forest Department, Industrialists. Wildlife and natural enthusiasts 1+1	2
Ans15	a) Exploiting resource with short term aims provide immediate advantages that meet current basic human need. b) Exploiting resources with short- term aim is beneficial for the present generation to meet current basic human made while using with a long term perspective aims to fulfill the need of future generation. 1+1	2

<table>
<tr><td>Ans16</td><td>a) It flat basins large dams cause flooding of large tracts of and destroying local animals and habitats.
b) Social problems because they displace large number of peasants and tribal's without adequate compensation or rehabilitation.
c) Economic problems because they swallow up huge amount of public money without the generation of proportionate benefits.
d) Environmental problems because they contribute enormously to deforestation and the loss of biological diversity. 1+1+1</td><td>3</td></tr>
<tr><td>Ans17</td><td>a) Both the energy sources coal and petroleum, take millions of years for their formation . As these resources are being utilized at a much faster rate than their formation, they will be exhausted in the near future. Hence they need to be conserved.
b) I) Loss of vegetation cover.
ii) Dumping of Urban waste
iii) Diversion for high water demanding crops.(any two) 1+2</td><td>3</td></tr>
<tr><td>Ans18</td><td>a) Dumping of garbage and untreated sewage from all the towns and cities on the banks of the rivers.
b) Releasing chemical effluents from industries directly into the river water.
c) Immersion of ashes or even dead bodies in the river, performed as a ritual. (any three point)</td><td>3</td></tr>
<tr><td>Ans19a)

b)</td><td><table><tr><td>Biodegradable Waste</td><td>Non Biodegradable waste</td></tr><tr><td>Waste food</td><td>Used pen</td></tr><tr><td>Paper</td><td>Plastic Bag</td></tr><tr><td>Pencil</td><td>Alumunium foil</td></tr></table>Values
i) Sensitivity towards nature.
ii) Love and concern about nature.
iii) Garbage disposal method : Recycling, composting, sanitary landfill etc (any two) 1+1+1</td><td>3</td></tr>
<tr><td>Ans20</td><td>a) Reusing even better than recycling :
i) Can be done at household level with no expense of energy
ii) It does not cause pollution and is an eco-friendly practice.
b) Deforestation, Mining, Industrialization. 2+3</td><td>5</td></tr>
<tr><td>Ans21</td><td><table><tr><td>a) Rajasthan</td><td>Khadins</td></tr><tr><td>b) Maharashtra</td><td>Bandharas and tals</td></tr><tr><td>c) Madhya Pradesh</td><td>Bundhis</td></tr><tr><td>d) Uttar Pradesh</td><td>Bundhis</td></tr><tr><td>e) Bihar</td><td>Ahars and Pyries</td></tr><tr><td>f) Himachal Pradesh</td><td>Kulhs</td></tr><tr><td>g) Jammu Region</td><td>Ponds</td></tr><tr><td>h) Tamil Nadu</td><td>Tanks</td></tr><tr><td>i) Karnataka</td><td>Katlas</td></tr><tr><td>j) Kerala</td><td>Surangams</td></tr></table>½ x 5</td><td>5</td></tr>
<tr><td>Ans22</td><td>a) Unused water in the water bottle may be used for watering plant.
b) Use fan and light only required.
c) Use solar water heating devices.
d) Use CFL in places of conventional bulbs/ tubes.
e) Wash vehicles only when they are dirty. 1+1+1</td><td>5</td></tr>
</table>