CLASS-XII (BIOLOGY) (COACHING AND NON-COACHING)

HOMEWORK ASSIGNMENT CHAPTER -1

REPRODUCTION IN ORGANISMS

* ***Q. NO. 1 TO 5 (MARKS-2)***
* ***Q. NO. 6 TO 10 (MARKS-3)***
* ***Q. NO. 11 TO 15 (MARKS-5)***

Q.1 Mention the sites where syngamy occurs in amphibians and reptiles respectively. (C.B.S.E 2010)

Q.2 Offspring derived by asexual reproduction are called clones. Justify giving two reasons. (C.B.S.E2010)

Q.3 Mention the characteristic features and a function of zoospores in some algae. (C.B.S.E 2010)

Q.4 Name an organism where cell division is itself a mode of reproduction. (C.B.S.E 2010)

Q.5 In Yeast and Amoeba, the parent cell divides to give rise to two new individual cells. How does the cell division differ in these two organisms? (C.B.S.E.2010)

Q.6 Name the type of cell division that takes place in the zygote of an orgnaism exhibiting haplontic life cycle. (C.B.S.E 2010)

Q.7 How does Penicillium reproduce asexually? (C.B.S.E 2011)

Q.8 Name the phase all organisms have to pass through before they can reproduce sexually. (C.B.S.E 2011)

Q.9 Name the group of orgnisms that produces non-motile male gametes. How do they reach the female gamete for fertilization. (C.B.S.E 2011)

Q.10 Mention the unique flowering phenomenon exhibited by Strobilantheskunthiana. (C.B.S.E 2012)

Q.11 Cucurbits and Papaya plants bear staminate and pistillate flowers. Mention the categories they are put separately on the basis of type of flowers they bear. (C.B.S.E. 2012)

Q.12 Give reason : some organisms like honeybees are called parthengenetic animals. (C.B.S.E 2012)

Q.13 A moss plant produces a large number of antherozoids but relatively only a few egg cells. Why? (C.B.S.E 2010)

Q.14 Why are Papaya and Data Palm plants said to be dioecious whereas cucurbits and coconut palms are monoecious, inspite of all of them bearing unisexual flowers? (C.B.S.E 2010)

Q.15 The cell division involved in gamete formation is not of the same type in different orgnaims justify. (C.B.S.E. 2011)

CLASS-XII (BIOLOGY) (COACHING AND NON-COACHING)

HOMEWORK ASSIGNMENT CHAPTER -2

SEXUAL REPRODUCTION IN FLOWERING PLANTS

* ***Q. NO. 1 TO 5 (MARKS-2)***
* ***Q. NO. 6 TO 10 (MARKS-3)***
* ***Q. NO. 11 TO 15 (MARKS-5)***

Q.1 Write briefly the role of pollination in the growth and development in an angiosperm. (C.B.S.E 2007)

Q.2 Describe the structure of a typical/polygonum type embryo sac found in flowering plants. Why is it called monosporic? (C.B.S.E 2007)

Q.3 Why is the process of fertilization in a flowering plant referred to as double fertilization? (C.B.S.E 2007)

Q.4 What is the process of fertilization in flowering plant referred to as double fertilization? (C.B.S.E 2007)

Q.5 The flower of Brinajal is referred to as chasmoganous while that of Bean is cleistogamous. How are they different from each other.

Q.6 Coconut Palm is monoecious while Date Palm is dioecious. Why are they called so? (C.B.S.E 2008)

Q.7 Banana is a parthenocarpic fruit whereas oranges show polyembryony. How are they different from each other with respect to seeds? (C.B.S.E 2009)

Q.8 Name the cell from which the endosperm of Coconut develops. Give the characteristic features of endosperm of coconut. (C.B.S.E 2009)

Q.9 Draw a vertical section of a Maize grain and label.
(i) pericarp (ii) scutellum (iii) coleoptile (iv) radicle (C.B.S.E 2009)

Q.10 Fertilization is essential for production of seeds
(i) Give one example of an angiosperm that produces seed without fertilization. Name the process.
(ii) Explain two ways by which seeds develop without fertilization. (C.B.S.E 2009)

Q.11 Explain any two devices by which autogamy is prevented in flowering plants. (C.B.S.E 2009)

Q.12 Mention the reasons for difference in ploidy of zygote and primary endosperm nucleus in an angiosperm. (C.B.S.E 2010)

Q.13 How does the floral pattern of Mediterranean orchid, Ophrys, guarantee cross pollination? (C.B.S.E 2010)

Q.14 Draw a longitudnal section of a post pollinated pistil to who entry of pollen tube into mature embryo sac. Label filiform apparatus, chalazal end, hilum, antipodals, male gametes and secondary nucleus. (C.B.S.E 2010)

Q.15 Where does triple fusion take place in a flowering plant. Why is it so called? Mention its significance. (C.B.S.E 2010)

CLASS-XII (BIOLOGY) (COACHING AND NON-COACHING)

HOMEWORK ASSIGNMENT CHAPTER -3

HUMAN REPRODUCTION

* ***Q. NO. 1 TO 5 (MARKS-2)***
* ***Q. NO. 6 TO 10 (MARKS-3)***
* ***Q. NO. 11 TO 15 (MARKS-5)***

Q. 1. Why does failure of testes to descend into scrotum produce sterility? (C.B.S.E. 2006 Comptt.)

Q. 2. Sperms have a tail whereas eggs do not. Why so? (C.B.S.E. 2007)

Q. 3. Mention the function of trophoblast in human embryo. (C.B.S.E. 2011)

Q. 4. Name of embryonic stage that gets implanted in the uterine wall of a human female. (C.B.S.E. 2011)

Q. 5. What stimulates pituitary to release the hormone responsible for parturition? Name the hormone. (C.B.S.E. 2011)

Q. 6. List the changes the primary oocyte undergoes in the tertiary follicular stage in the human ovary. (C.B.S.E. 2012)

Q. 7. Write the location and function of Sertoli cells in humans. (C.B.S.E. 2012)

Q. 8. When do the oogenesis and spermatogenesis initiate in human females and males respectively? (C.B.S.E. 2012)

Q. 9. Mention the difference between spermiogenesis and spermiation. (C.B.S.E. 2012)

Q. 10. Where is acrosome present in humans? Write its functions. (C.B.S.E. 2012)

Q. 11. Explain the function of umbilical cord. (C.B.S.E. 2012)

Q. 12. How is the entry of only one sperm and not many ensured into an ovum during fertilization in humans? (C.B.S.E. 2012)

Q. 13. Identify the given figure and the part labeled ‘ A’. (C.B.S.E. 2012)

Q. 14. Mention the location and function of Leydig cells in humans. (C.B.S.E. 2012)

Q. 15. Mention the function of mitochondria in sperm. (C.B.S.E. 2012)

CLASS-XII (BIOLOGY) (COACHING AND NON-COACHING)
HOMEWORK ASSIGNMENT CHAPTER - 4
REPRODUCTIVE HEALTH

* ***Q. NO. 1 TO 5 (MARKS-2)***
* ***Q. NO. 6 TO 10 (MARKS-3)***
* ***Q. NO. 11 TO 15 (MARKS-5)***

Q.1. Mention any two events that are inhibited by the intake of oral contraceptive pills to prevent pregnancy in humans. (C.B.S.E. 2009 Comptt.)

Q. 2. Why is tubectomy considered a contraceptive method? (C.B.S.E. 2010)

Q. 3. A mother of one year old daughter wanted to space her second child. Her doctor suggested Cu-T. Explain its contraceptive actions. (C.B.S.E. 2008)

Q. 4. (a) Expand IUD (b) Why is hormone releasing IUD considered a good contraceptive to space children? (C.B.S.E. 2008)

Q. 5. Explain any two methods of Assisted Reproductive Technology (ART) that has helped childless couples to bear children. (C.B.S.E. 2008 Comptt.)

Q. 6. How does Cu T act as an effective contraceptive for human females? (C.B.S.E. 2009)

Q. 7. Name the hormonal composition of oral contraception used by human females. Explain how does it act as contraceptive? (C.B.S.E. 2009)

Q. 8. Why do some women use “Saheli” pills? (C.B.S.E. 2009)

Q. 9. How are assisted reproductive technologies helpful to humans? How are ZIFT and GIFT different from intrauterine transfers? Explain. (C.B.S.E. 2009)

Q. 10. Name any two copper releasing intra-uterine devices (IUDs). List two reasons that make them effective contraceptives. (C.B.S.E. 2009 Comptt.)

Q. 11. How do copper and hormone releasing IUDs act as contraceptives? Explain. (C.B.S.E. 2010)

Q. 12. Explain the zygote intrafallopian transfer technique (ZIFT). How is intrauterine transfer technique (IUT) different from it? (C.B.S.E. 2010)

Q. 13. What is amniocentesis? Why has the government imposed a statutory ban inspite of its importance in the medical field? (C.B.S.E. 2010)

Q. 14. Why is ‘ Saheli’ a well accepted contraceptive pill? (C.B.S.E. 2010)

Q. 15. Why is CuT considered a good contraceptive device to space children? (C.B.S.E. 2011)

CLASS-XII (BIOLOGY) (COACHING AND NON-COACHING)

HOMEWORK ASSIGNMENT CHAPTER - 4

PRINCIPLES OF INHERITANCE AND VARIATION

* ***Q. NO. 1 TO 5 (MARKS-2)***
* ***Q. NO. 6 TO 10 (MARKS-3)***
* ***Q. NO. 11 TO 15 (MARKS-5)***

1. Who developed Punnet Square? (C.B.S.E. 2007)
2. Why do certain genes tend to be inherited together in a cell at the time of cell division. (C.B.S.E. 2008)
3. What is sex chromosome complement of male bird. (C.B.S.E.
4. Name one autosomal dominant and one autosomal recessive Mendelian disorder in humans. (C.B.S.E. 2010)
5. Write the genotype of (i) An individual who is carrier of sickle-cell anaemia gene but apparently unaffected (ii) An individual affected with the disease. (C.B.S.E. 2010)
6. A human being suffering from Down' s syndrome show trisomy of 21$_{st}$ chromosome. Mention the cause of this chromosomal abnormality. (C.B.S.E. 2010)
7. Name the event during cell division cycle that results in gain or loss of chromosome. (C.B.S.E. 2011)
8. Name the phenomenon and cell responsible for the development of new individual without fertilization as seen in honey bees. (C.B.S.E. 2011)
9. (a) A garden pea plant
   (A) Produced inflated yellow pods and another plant.
   (B) of the same species produced constricted green pods.
   (b) A garden pea plant produced axial white flowers. Another of the same species produced terminal violet flowers.
   (c) A garden pea plant produced round green seeds. Another of the same species produced wrinkled yellow seeds. (C.B.S.E. 2012)

IDENTIFY THE DOMINANT TRAITS:

10. Name the respective pattern of inheritance where F_1phenotype
    (a) Does not resemble either of the two parents and is in between the two
    (b) Resembles only one of the two parents. (C.B.S.E. 2012)
11. In a dihybrid cross, when would the proportion of the parental gene combinations be much higher than non-parental type as experimentally shown by Morgan and his group. (C.B.S.E. 2012)
12. Why is that the father never passes on the gene for haemophilia to his sons? Explain. (C.B.S.E. 2012)
13. Write the possible genotypes Mendel got when be crossed F_1 tall pea plants with dwarf pea plants. (C.B.S.E. 2012)
14. Why in a test cross, did Mendel cross a tall pea plant with a dwarf pea plant only. (C.B.S.E. 2012)
15. Explain what do you know of criss-cross inheritance. (C.B.S.E. 2007)

CLASS-XII (BIOLOGY) (COACHING AND NON-COACHING)

HOMEWORK ASSIGNMENT CHAPTER -6

MOLECULAR BASIS OF INHERITANCE

* ***Q. NO. 1 TO 5 (MARKS-2)***
* ***Q. NO. 6 TO 10 (MARKS-3)***
* ***Q. NO. 11 TO 15 (MARKS-5)***

1. Mention two functions of codon AUG. (C.B.S.E. 2010)
2. Name the enzyme involved in the continuous replication of DNA strand. Mention the polarity of template strand. (C.B.S.E. 2010)
3. Mention the role of the codons AUG and UGA during protein synthesis? (C.B.S.E. 2011)
4. Mention the contribution of genetic maps in human genome project. (C.B.S.E. 2011)
5. The length of a DNA molecule in a typical mammalian cell is calculated to be approximately 2.2 meters. How is the packaging of this long molecule done to accommodate it within the nucleus of the cell. (C.B.S.E. 2008)
6. Explain the process of charging of tRNA. Why is it essential in translation?(C.B.S.E.2008)
7. (a) Draw the structure of the initiator tRNA adaptor molecule.
   (b) Why is tRNA called an adaptor molecule? (C.B.S.E. 2008)
8. Given below is part of the template strand of a structural gene: TAC CAT TAG GAT
   (a) Write its transcribed mRNA strand with its polarity.
   (b) Explain the mechanism involved in initiation of transcription of this strand. (C.B.S.E.2008)
9. How is the translation of mRNA terminated? Explain. (C.B.S.E.2009)
10. Draw a labeled schematic sketch of replication fork of DNA. Explain the role of the enzymes involved in DNA replication. (C.B.S.E.2009)
11. Explain the dual function of AUG codon. give the sequence of bases it is transcribed from and its anticodon. (C.B.S.E. 2009)
12. What are satellite DNAs in a genome? Explain their role in DNA finger printing. (C.B.S.E. 2009)
13. (a) Draw a schematic representation of a transcription unit and show the following in it.
    (i) Direction in which the transcription occurs (ii) Polarity of the two strands involved (iii) Template strand (iv) Terminator
    (b) Mention the function of promoter in transcription. (C.B.S.E.2009)
14. (a) In human genome which one of the chromosomes has the most genes and which one has the fewest?
    (b) Scientists have identified about 1.4 million single nucleotide polymorphs in human genome. How is the information of their existence going to help the scientists. (C.B.S.E. 2009)
15. Name the category of codons UGA belongs to. Mention another codon of the same category. Explain their role in protein synthesis. (C.B.S.E. 2009)

CLASS-XII (BIOLOGY) (COACHING AND NON-COACHING)

HOMEWORK ASSIGNMENT CHAPTER - 8

HUMAN HEALTH AND DISEASES

* ***Q. NO. 1 TO 5 (MARKS-2)***
* ***Q. NO. 6 TO 10 (MARKS-3)***
* ***Q. NO. 11 TO 15 (MARKS-5)***

1. What is vaccine? Give an example of a vaccine produced by recombinant technology. (C.B.S.E. 2006)
2. Why are stimulants and hallucinogens categorized as psychotropic drugs? Give example of each of two types mentioned. (C.B.S.E. 2006)
3. A person has been diagnosed as HIV positive. (i) Name the test which the person underwent. (ii) Write full name of pathogen involved and describe its structure. (iii) Which particular cells of this person are likely to get destroyed. (C.B.S.E. 2006)
4. What is the other name of filarial? Give the scientific name of causative germ of elephantiasis. (C.B.S.E. 2007)
5. Name and explain the type of barrier of innate immunity where some cells release interferons when infected. (C.B.S.E. 2007)
6. What are oncogenes? Explain. (C.B.S.E. 2007)
7. List any four danger signals of cancer. (C.B.S.E. 2007)
8. Why is blood group identification not required for transfusing serum? (C.B.S.E. 2007)
9. What are second generation vaccines? (C.B.S.E. 2007)
10. Describe the structure of immunoglobin antibody. Draw a diagram showing the formation of antigen-antibody complex and label the parts. (C.B.S.E. 2007)
11. Write down the terms in expanded form.
    (i) AMIS (ii) CMIS (iii) NACO (C.B.S.E. 2007)
12. (i) How and at what stage does Plasmodium enter into human body?
    (ii) With the help of flow chart only show the stages of asexual reproduction in the life of the parasite in the infected human.
    (iii) Why does the victim show symptoms of high fever? (C.B.S.E. 2008)
13. Why do sports persons often fall victim to cocaine addiction? (C.B.S.E. 2008)
14. (a) Name the infective stages of Plasmodium which Anopheles mosquito takes in along the blood meal from an infected person.
    (b) Why does the infection cause fever in humans?
    (c) Give a flow chart of the part of life cycle of this parasite passed in the insect. (C.B.S.E.2008)
15. (a) Name the respective forms in which the malarial parasite gains entry into (i) Human and (ii) Body of female Anopheles.
    (b) Name the hosts where the sexual and the asexual reproduction of malarial parasite respectively.
    (c) Name the toxin responsible for the appearance of symptoms of malaria in humans. Why do these symptoms occur periodically? (C.B.S.E.2009)

CLASS-XII (BIOLOGY) (COACHING AND NON-COACHING)

Homework Assignment Chapter -9

STRATEGIES FOR ENHANCEMENT IN FOOD PRODUCTION

* ***Q. NO. 1 TO 5 (MARKS-2)***
* ***Q. NO. 6 TO 10 (MARKS-3)***
* ***Q. NO. 11 TO 15 (MARKS-5)***

1. Why is bagging of the emasculated flowers essential during hybridization experiments? (C.B.S.E. 2009)
2. Mention the strategy used to increase homozygosity in cattle for desired traits. (C.B.S.E. 2009)
3. Which one is used in apiculture: Hilsa, Apisindica, Sonalika. (C.B.S.E. 2009)
4. Which of the following is the semi-dwarf wheat that is high yielding and disease resistant? Pusa Shubra KalyanSona, Rana. (C.B.S.E. 2009)
5. What is the major advantage of producing plants by micro propagation? (C.B.S.E. 2009)
6. What is meant by biofortification? (C.B.S.E. 2009)
7. How can pollen grains of wheat and rice which tend to lose viability within 30 minutes of their release be made available months later for breeding programmes? (C.B.S.E. 2009 Comptt.)
8. State the importance of biofortification. (C.B.S.E. 2011)
9. Name the following: (a) The semidwarf variety of wheat which is high yielding and desease resistant (b) Any one interspecific hybrid mammal. (C.B.S.E. 2012)
10. Write the name of the following: (a) The most common species of bees suitable for apiculture (b) An improved breed of chicken. (C.B.S.E. 2012)
11. Why is the South Indian Sugarcane preferred by agriculture? (C.B.S.E. 2012)
12. (a) How can haploid plants plants be raised in the laboratory?
    (b) Name the plant first used in India to produce haploid plants.
    (c) Can haploid plants raise their own progeny? Give reason. (C.B.S.E. 2006)
13. What is haploidy? How are haploid plants raised? How are they helpful in plant breeding? (C.B.S.E. 2007)
14. How is autopolyploid produced? Give an example. (H.S.E.B. 2008)
15. Expand MOET. Explain the procedure of this technology in cattle improvement. (C.B.S.E. 2008)

CLASS-XII (BIOLOGY) (COACHING AND NON-COACHING)

HOMEWORK ASSIGNMENT CHAPTER-10

MICROBES IN HUMAN WELFARE

* ***Q. NO. 1 TO 5 (MARKS-2)***
* ***Q. NO. 6 TO 10 (MARKS-3)***
* ***Q. NO. 11 TO 15 (MARKS-5)***

1. What is the biochemical reaction of yeast fermentation of molasses for alcoholic fermentation? (C.B.S.E. 2007)
2. What protects nitrogenase? (C.B.S.E. 2007)
3. What is economic value of Spirulina? (C.B.S.E. 2008)
4. Name the group of organisms and the substrate they act on to produce biogas. (C.B.S.E. 2009)
5. Name the organism commercially used for the production of single cell protein. (C.B.S.E. 2009)
6. Which of the following is a fee living bacterium that can fix nitrogen in the soil? Spirulina, Azospirillum, Sonalika. (C.B.S.E. 2009)
7. Milk starts to coagulate when lactic acid bacteria (LAB) are added to warm milk as starter. Mention any other two benefits LAB provides. (C.B.S.E. 2009)
8. Which of the following is a cyanobacterium that can fix atmospheric nitrogen? Azospirillum, Ocillatoria, Spirulina. (C.B.S.E. 2009)
9. Which of the following produces single cell proteins? Sonalika, Spirulina, Saccharomyces. (C.B.S.E. 2009)
10. Write the scientific name of the microbe used for fermented malted cereals and fruit juices. (C.B.S.E. 2011)
11. Mention the source orgsnisms of gene cry I Ac and its target pest. (C.B.S.E.2011)
12. Mention the role of cyanobacteria as biofertilizers. (C.B.S.E. 2012)
13. Why should biological control of pests and pathogens be preferred to the convential use of chemical pesticides? Explain hoe the following microbes act as biocontrolagents : (a) Bacillus thuringiensis (b) Nucleopolyhedrovirus. (C.B.S.E. 2008)
14. During the secondary treatment of the primary effluent, how does the significant decrease in BOD occur? (C.B.S.E. 2009)
15. (a) How does activated sludge get produced during sewage treatment?
    (b) Explain how this sludge is used in biogas production. (C.B.S.E. 2009)