I SEMESTER EXAM 2017-18

STD : XII **SUBJECT: BIOLOGY** **MARKS : 70**

DATE: 05/10/2017 **TIME: 3 HRS**

SECTION I

Q1. Rewrite the following statements using the correct option: **7**

1. The biological scissors is .
   a. Restriction endonuclease b. gyrase
   c. DNA ligase d. helicase

2. Dead and dries cell mass of microbes having nutritive value is also known as .
   a. BGA (Blue green algae) b. SCP (single cell protein)
   c. STP (sewage treatment plant) d. VAM (vesicular arbuscularmycorrhizae)

3. From the visible spectrum of light, which component is reflected by the green leaves?
   a. Blue b. Red
   c. Green d. Orange

4. If the codon on m-RNA is AUG, the compatible anticodon on t-RNA is .
   a. UAG b. UAC
   c. GUA d. AUG

5. *Trichodermakonigi* is a source of .
   a. invertase b. lipase
   c. pectinase d. cellulase

6. Edible fruiting bodies are produced by .
   a. Yeast b. *Rhizopus*
   c. *Nostoc* d. *Agaricus*

7. What is the correct sequence of the stages in bacteriophage lytic cycle?
   a. Attachment, Penetration, Lysis, Multiplication
   b. Attachment, Penetration, Multiplication, Lysis
   c. Lysis, Penetration, Multiplication, Attachment
   d. Attachment, Lysis, Multiplication, Penetration

Q2.A Answer the following in One sentence only: **6**

1. Give reason: Emasculation is done in a flower which is selected as female parent.
2. Label the parts (1) and (2) in budding of yeast cell.

3. Enlist the types of DNA library.
4. Give the role of VAM related to soil fertility.
5. What are 'jumping gene'?
6. Give the importance of heterocyst in cyanobacteria.

Q2 B Sketch and label 'clover leaf model' of t-RNA. **2**

Q2 C Attempt any TWO of the following: **4**

1. Give graphic representation of cyclic photophosphorylation.
2. Explain the role of microbes in sewage treatment.
3. With the help of diagram describe emasculation and bagging.
4. What is a 'biopatent'? Give any two examples.

Q3A Attempt any TWO of the following: **6**

1. Describe any two applications of tissue culture technique.
2. Describe the steps of PCR technique.
3. Describe the experiment of Hershey and Chase to prove that DNA is the genetic material.

Q3B Sketch and label 'ultrastructure of chloroplast' **3**

Q4Explain the semi-conservative replication of DNA . **7**

OR

State and explain the Law of Independent Assortment with a suitable example.

SECTION II

Q5 Rewrite the following statements using the correct option: **7**

1. Elephantiasis is caused by .
   a. *Wuchereriabancrofti* b. *Plasmodiumvivax*
   c. Bedbug d. Elephant

2. Genetically engineered human insulin is obtained by inserting the gene in .
   a. Pancreatic cells b. E. coli
   c. *Agrobacteriumtumefaciens* d. *Drosophilamelanogaster*

3. The connecting link between ape and man is .
   a. *Dryopithecus* b. *Australopithecus*
   c. *Homoerectus* d. *Homoneanderthalensis*

4. The genetic marker used as key factor in DNA fingerprinting is .
   a. VNTRs b. Exons
   c. Introns d. DNA probes

5. The most common types of fossils are .
   a. Moulds b. casts
   c. actual remains d. models

6. Safety of polio vaccine is tested on transgenic .
   a. Pig b. rabbit
   c. fish d. mice

7. Mucous membrane trapping the microbes acts as a .
   a. Physiological barrier b. Physical barrier
   c. Phagocytic barrier d. Inflammatory barrier

Q6.A Answer the following in One sentence only: **6**

1. Give the name of the process involved in DNA fragmentation.
2. Define genome.
3. What is the use of tissue plasminogen activator?
4. Name the type of animal breeding carried out to produce a mule.
5. What is criss- cross inheritance?
6. Mention any two methods used to prevent spoilage of fish.

Q6 B Sketch and label structure of chromosome. **2**

Q6 C Attempt any TWO of the following: **4**

1. Explain the concept of 'survival of the fittest'.
2. Give economic importance of apiculture.
3. Distinguish between X and Y chromosome.
4. Give application of vaccine.

Q7A Attempt any TWO of the following: **6**

1. Give the adverse effects of opioids, cannabinoids and morphines on human health.
2. Describe the structure of an antibody.
3. Give the importance of transgenic animals.

Q7B Sketch and label T.S. of vein. **3**

Q8 Draw a neat and labelled diagram, explain the working of internal structure of human heart.

OR **7**

What is sex-linkage? Explain the inheritance of colour blindness and haemophilia with suitable example.