Roll No. _____ [Total No. of Pages : 2

PGIIIS-N-1539 B-17

M.Sc. III Semester Degree Examination

BOTANY

(Genetics, Cell and Molecular Biology)

Paper : HCT 3.1

Time : 3 Hours Maximum Marks : 80

Instructions to Candidates :

i) Answer any five questions.

ii) Question No. 1 is compulsory.

1. Answer in one or two sentences. **(10×2=20)**

a) Contrasting characters.

b) Lethal gene.

c) Euchromatin

d) Golgi bodies.

e) Cellular check points.

f) Kinetochore.

g) Pseudogene.

h) Operon.

i) Macrophage.

j) Hershey and chara.

2. Discuss the factors effecting allelic frequencies in population. **(15)**

3. Describe the mechanism of DNA damage and repair. **(15)**

4. Explain molecular basis of crossing over. **(15)**

5. Write an account on gene and immunity. **(15)**

6. Write short notes on any **Three** of the following. **(15)**

   a) Cytoplasmic inheritance

   b) Microtubules

   c) Nucleosome Model

   d) Splicing

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Roll No. _____ [Total No. of Pages : 2

PGIIIS-N-1540 B-17

M.Sc. III Semester Degree Examination

BOTANY

(Plant Physiology and Metabolism)

Paper : HCT 3.2

(New)

Time : 3 Hours Maximum Marks : 80

Instructions to Candidates :

i) Answer any five questions.

ii) Questions No. 1 is compulsory.

1. Answer in one or two sentences. **(10×2=20)**

a) Proline.

b) Triglycerides.

c) RUBP case.

d) Passive transport.

e) Abscisic acid.

f) Ethylene.

g) Abiotic stress.

h) Leghaemoglobin.

i) UV stress.

j) Kranz anatomy.

2. Explain with suitable diagram models of membrane structure. **(15)**

3. Explain the mechanism of action of phytochrome. **(15)**

4. What are the applications of plant growth regulations. (15)

5. Explain the effects and mechanism of cold stress tolerance in plants. (15)

6. Write short notes on any **Three** of the following. (3×5=15)

   a) Chloroplast.

   b) Biosynthesis of Sucrose.

   c) Nitrate reduction.

   d) Photorespiration.

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PGIIIS-N-1541 B-17

M.Sc. III Semester Degree Examination

BOTANY

(Genetic Engineering)

Paper : SCT 3.3.1

(New)

Time : 3 Hours Maximum Marks : 80

Instructions to Candidates :

i) Answer any five questions.

ii) Questions No. 1 is compulsory.

1. Answer in **one** or **two** sentences. **(10×2=20)**

a) T_4 Liqare

b) Shuttle vectors

c) Insertion sequences

d) Frameshift mutation

e) SSR

f) RAPD

g) protease inhibitor

h) T plasmid

i) Golden rice

j) c-DNA

2. Explain restriction enzymes types, nomenclature and mode of action. **(15)**

3. Illustrate the construction of cDNA library and its applications in genetic engineering. **(15)**

4. Discuss different types of PLR and their applications. **(15)**

5. Describe the different physical methods of gene delivery and their merits. **(15)**

6. Write short notes on any **Three** of the following. **(3×5=15)**

a) PUC 18

b) Northern blotting

c) AFLP

d) Marker gene

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PGIIIS-N-1541A B-17
M.Sc. III Semester Degree Examination
BOTANY
(Bio energy and Biofuels)
Paper : SCT 3.3.2
(New)

Time : 3 Hours Maximum Marks : 80

Instructions to Candidates :

i) Answer any five questions.
ii) Question No. 1 is compulsory.

1. Answer in one or two sentences. **(10×2=20)**

a) Bio energy

b) Biofuels

c) Biomass

d) Compaction

e) Pellets

f) Forest Residues

g) Micro algae

h) Bioreactors

i) Pyrolysis

j) Biodiesel

2. Give an account on the survey of various energy sources. **(15)**

3. Describe in detail the different types of conversion of Biomass. **(15)**

4. Give an account on Advanced Biofuels with suitable examples. (15)

5. Describe the Energy crops for Biofuel production. (15)

6. Answer any **Three** of the following. (3×5=15)

   a) Non-conventional methods of Energy

   b) Biomass crops

   c) Photo bioreactors

   d) Biogas production

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