SM – 387

VI Semester B.Sc. Examination, May/June 2018
(CBCS) (Fresh + Repeaters) (2016 – 17 and Onwards)
BOTANY – VII
Cytology, Genetics, Evolution and Plant Breeding

Time : 3 Hours Max. Marks : 70

Instructions : *1) Answer **all** Parts.*

*2) Draw diagrams **wherever** necessary.*

PART – A

A. Explain/Define **any ten** of the following in **two** to **three** sentences : **(10×2=20)**

1) What is Karyotype ?
2) What is 2R-hypothesis ?
3) What is Pollen Bank ?
4) What is an allele ?
5) What are caspases ?
6) Mention the types of chromosomes based on the position of centromere.
7) What are Chaismata ?
8) Mention the types of chromosomal aberrations.
9) Differentiate between Phenotype and Genotype.
10) Any two significances of Mitosis.
11) What is Neo-Darwinism ?
12) What are Homologous chromosomes ?

P.T.O.

PART – B

B. Write critical notes on **any four** of the following. **(4×5=20)**

13) Mitotic Apparatus.

14) Incomplete Linkage with an example.

15) Objectives of Plant Breeding.

16) Pachytene and Diplotene stages of Meiosis–I.

17) Differences between Mitosis and Meiosis.

18) Explain the Law of segregation with a monohybrid cross.

PART – C

C. Give a comprehensive account of **any three** of the following. **(3×10=30)**

19) Describe the structure of a chromosome and add a note on nucleosome.

20) Complementary factors with a suitable example.

21) Describe Grafting and Layering with suitable sketches.

22) Role of Polyploidy in plant evolution.

23) In Antirrhinum majus, tall (DD) is dominant over dwarf (dd) and the red flowers (RR) are incompletely dominant over white (rr), the hybrid being pink.
When a pure tall red is crossed to dwarf white, give the expected phenotypes both in F_1 and F_2.

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VI Semester B.Sc. Examination, May/June 2018
(CBCS) (Fresh + Repeaters) (2016-17 and Onwards)
BOTANY – VIII
Plant Physiology – II

Time : 3 Hours Max. Marks : 70

***Instructions** : 1) Answer **all** questions.*
*2) Draw diagrams **wherever** necessary.*

PART – A

A. Explain/Define **any ten** of the following in **two** or **three** sentences : **(10×2=20)**

1) Name any two nitrogen containing macromolecules of a cell.
2) Differentiate a co-factor from a co-enzyme.
3) What is ammonification ?
4) Name two synthetic auxins.
5) Draw the sigmoid growth curve.
6) What are secondary metabolites ? Give one example.
7) What are tropic movements ? Give an example.
8) What is terminal oxidation ?
9) What is an active site ?
10) Why is Calvin cycle also known a C_3 pathway ?
11) What are vitamins ? Give the chemical name of any one vitamin.
12) Expand :
    i) RuBP
    ii) RuBISCO.

P.T.O.

PART – B

B. Explain critical notes on **any four** of the following : **(4×5=20)**

13) Enzyme kinetics

14) Synthesis of amino acids

15) Factors affecting respiration

16) Emerson-enhancement effect

17) Cytokinins

18) Classification of enzymes.

PART – C

C. Give a comprehensive account of **any three** of the following : **(3×10=30)**

19) Explain the light reaction of photosynthesis.

20) Explain Kreb's cycle.

21) Give an account of photoperiodism and phytochrome.

22) What are the physiological effects of auxins ?

23) What is symbiotic nitrogen fixation ? Explain with reference to legume-Rhizobia interaction.