US – 370

VI Semester B.Sc. Examination, May 2017
(CBCS) (Fresh) (2016-17 and Onwards)
BOTANY – VII
Cytology, Genetics, Evolution and Plant Breeding

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** to **three** sentences : **(10×2=20)**

1) What is a kinetochore ?
2) What is a telomere ?
3) What is a holocentric Chromosome ?
4) Define Karyokinesis.
5) What are mitotic inhibitors ? Give an example.
6) Events of interphase.
7) What is a heterozygous genotype ?
8) Define epistasis.
9) Define test cross.
10) Trisomy with an example.
11) Intergeneric hybridization with an example.
12) Quarantine.

P.T.O.

PART – B

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

13) Nucleosome model of an eukaryotic chromosome.

14) Apoptosis.

15) Incomplete dominance with an example.

16) Sex determination in Melandrium.

17) Monosomy with an example.

18) Layering and Gootee.

PART – C

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

19) Describe meiosis-I with diagrams.

20) Explain law of independent assortment with an example.

21) In sweet peas, the genes C and P when present together produce purple flowers. But, when either C or P is present alone, it produces white flowers.

What phenotypic ratio will be obtained in the F_2 generation when two white flowered varieties are crossed ?

Define the factor interaction involved in the problem.

22) What are chromosomal aberrations ? Explain deletion and inversion.

23) a) Role of mutations in evolution.

b) Pollen banks.

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BOTANY – VIII
Plant Physiology – II

Time : 3 Hours Max. Marks : 70

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

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

1) What are Isoenzymes ? Give an example.
2) Mention the influence on pH on enzyme action.
3) What are hydrolytic enzymes ? Give an example.
4) What is amino acid ? Give an example.
5) Mention any two non-symbiotic nitrogen fixing organisms.
6) What is enzyme specificity ?
7) Expand : PGA
   RUDP.
8) What are Kranz anatomy ?
9) Emerson enhancement effect.
10) Mention any two role of ABA in plants.
11) Mention any two methods of breaking seed dormancy.
12) Write a note on role of secondary metabolites in plant defence.

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

13) With neat labelled diagram, explain structure of enzyme.
14) Factors affecting enzyme action.
15) Differentiate between aerobic and anaerobic respiration.

P.T.O.

16) Cyclic photophosphorylation.

17) Define growth. Explain growth curve.

18) Physiological effect of ethylene.

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

19) Explain biological nitrogen fixation and add a note on nif genes.

20) Explain citric acid cycle with schematic representation.

21) a) Hatch and slack pathway with schematic representation.

b) Fermentation.

22) Define phytohormones. Give an account on physiological role of auxin on plants.

23) a) Photoperiodism.

b) Alkaloids as secondary metabolites.
