

M.Sc. 3rd Semester Examination, 2012

BOTANY

PAPER – BOT-304

Full Marks : 40

Time : 2 hours

Answer all questions

The figures in the right-hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Illustrate the answers wherever necessary

Write the answers to the questions of each Unit in separate books

UNIT – I

(*Palaeobotany*)

[*Marks : 20*]

1. Answer any *five* of the following : 1 × 5

(a) What is a 'form genus' ? Cite an example.

(*Turn Over*)

- (b) Define a 'bed'.
- (c) What is meant by 'lithostratigraphy' ?
- (d) What do you understand by the 'subduction' of lithospheric plates.
- (e) Name two characteristic megafloral remains from the 'Hartala Formation'.
- (f) What is meant by 'ichnofossil' ?
- (g) What are homotaxial beds ?
- (h) Name an arborescent lycopsid remain known from Indian Gondwanas.

2. Write brief notes on any *two* of the following : $2\frac{1}{2} \times 2$

- (i) Subdivisions of the 'Palaeozoic' and 'Mesozoic' eras
- (ii) Megafloristics of 'Talchir Formation'
- (iii) Geology of the ocean basin
- (iv) Permineralized preservation.

3. Answer any *one* of the following :

- (a) Define 'chemical evolution'. Briefly discuss the plausible means of the origin of organic molecules on prebiotic earth.

2 + 8

- (b) . What is stratigraphy ? Describe the steps of stratigraphic deductions. Discuss briefly the importance of plant fossils in stratigraphy. 2 + 5 + 3

UNIT – II

(*Palynology*)

[*Marks : 20*]

4. Answer any *five* questions from the following : 1 × 5

- (a) What is 'polyad' ? Where does it occur ?
- (b) What is an 'apocolpium' ?
- (c) What is 'sulcate' type of aperture ?
- (d) Mention a genus where pollen grains remain permanently in tetrads.
- (e) What is meant by the 'polynomorphs' in palaeopalynological connotation.
- (f) Name the class of antibodies primarily responsible for allergic reactions.
- (g) What is 'melittophily' ?
- (h) Define dichogamy.

5. Write brief notes on any *two* of the following : $2\frac{1}{2} \times 2$

(i) Extra exinous wall material of pollen grains and spores

(ii) Deceit pollination

(iii) Sporoderm structure

(iv) IgE mediated anaphylactic reactions (Type-I) during pollinosis.

6. Answer any *one* of the following :

(a) What is meant by the 'aperture' of a pollen grain? With suitable illustrations, briefly describe different types of aperture found in spores and pollen grains. $2 + 8$

(b) What is Melissopalynology? What are its objectives? Briefly describe how do honeybees collect pollen grains and nectar during their foraging? Name some important bee plants South West Bengal. $2 + 3 + 3 + 2$
