



DBB-003-001510

Seat No. _____

B. Sc. (Sem. V) (CBCS) Examination

May/June – 2015

**Botany : Paper - 502
(Biology of Seed Plants)**

Faculty Code : 003

Subject Code : 001510

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

- Instructions :**
- (1) Write answers of **all** questions in main answer book.
 - (2) Draw neat and labelled diagrams wherever **necessary**.
 - (3) Figures to the **right** side indicate full marks for the questions.

- 1** Choose the correct answer : **20**
- (1) Which of the following is a merit in the Bentham and Hooker's system of classification - The position of Gymnospermae in between dicots and monocots ?
 - (a) Closely related families are placed apart
 - (b) The placement of family asteraceae in the beginning of gamopetalae
 - (c) The placement of order ranales in the beginning
 - (d) The placement of orchidaceae in microspermae
 - (2) Taxonomic hierarchy refers to
 - (a) Stepwise arrangement of all categories for classification of plants and animals
 - (b) A group of senior taxonomists who decide the nomenclature of plants and animals
 - (c) A list of botanists or zoologists - who have worked on taxonomy of a species or group
 - (d) Classification of a species based on fossil record

- (3) Two plants are taxonomically related if
- (a) They store carbohydrate in the same type of molecule
 - (b) Both obtain energy from hydrolysis of ATP into ADP and inorganic phosphate
 - (c) Both have similarly lobed palmate leaves
 - (d) Both have pinnately veined leaves
- (4) Engler and Prantl published a phylogenetic system in monograph
- (a) Die Naturlichen Pflanzen Familien
 - (b) Historic Plantarum
 - (c) Species Plantarum
 - (d) Genera Plantarum
 - (e) Origin of Species
- (5) Brinjal, potato, tomato, onion, ginger belongs to
- (a) Single family (b) Species
 - (c) Genera (d) Same genus
- (6) Which of the following is correct with reference to flowers of family solanaceae ?
- (a) Pentamerous, actinomorphic, unisexual, hypogynous
 - (b) Pentamerous, zygomorphic, bisexual, epigynous
 - (c) Pentamerous, bisexual, actinomorphic, hypogynous
 - (d) Trimerous, actinomorphic, bisexual, hypogynous

- (7) Observe the given floral diagram and choose the suitable floral formula from the followings :

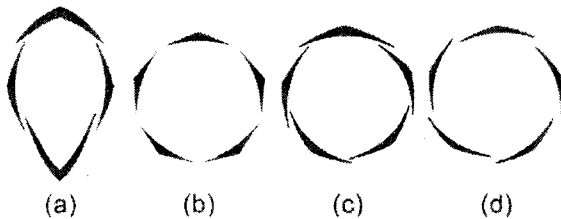


- (a) $\% \overset{\uparrow}{\underset{\downarrow}{\text{K}}}_5 \text{C}_5 \text{A}_{10} \underline{\text{G}}_1$
 (b) $\% \overset{\uparrow}{\underset{\downarrow}{\text{K}}}_{(5)} \text{C}_5 \text{A}_{10} \underline{\text{G}}_1$
 (c) $\% \overset{\uparrow}{\underset{\downarrow}{\text{K}}}_{(5)} \text{C}_{1+2+(2)} \text{A}_{(9)+1} \underline{\text{G}}_{(1)}$
 (d) $\% \overset{\uparrow}{\underset{\downarrow}{\text{K}}}_5 \text{C}_{1+2+(2)} \text{A}_{(9)+1} \underline{\text{G}}_{(1)}$
 (e) $\% \overset{\uparrow}{\underset{\downarrow}{\text{K}}}_{(5)} \text{C}_5 \text{A}_{(9)+1} \underline{\text{G}}_{(1)}$

- (8) The correct floral formula of chilli is

- (a) $\oplus \overset{\uparrow}{\underset{\downarrow}{\text{K}}}_{(5)} \text{C}_5 \text{A}_5 \text{G}_{(2)}$
 (b) $\oplus \overset{\uparrow}{\underset{\downarrow}{\text{K}}}_{(5)} \overset{\curvearrowright}{\text{C}}_{(5)} \text{A}_5 \text{G}_{(2)}$
 (c) $\oplus \overset{\uparrow}{\underset{\downarrow}{\text{K}}}_{(5)} \text{C}_{(5)} \text{A}_{(5)} \text{G}_{(2)}$
 (d) $\oplus \overset{\uparrow}{\underset{\downarrow}{\text{K}}}_5 \overset{\curvearrowright}{\text{C}}_5 \text{A}_{(5)} \text{G}_{(2)}$

- (9) Aestivation of petals in the flower of cotton is correctly shown in one of the following figures :



(10) Assertion : An ovule is transformed into a fruit after fertilization.

Reason : The fruits are formed only after fertilization.

- (a) If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.
- (b) If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.
- (c) If Assertion is true but the Reason is false.
- (d) If both Assertion and Reason are false.

(11) Match the followings and choose correct option :

Group A	Group B
A. Aleurone layer	(i) Without fertilization
B. Parthenocarpic fruit	(ii) Nutrition
C. Ovule	(iii) Double fertilization
D. Endosperm	(iv) Seed

Options :

- (a) A-i, B-ii, C-iii, D-iv
- (b) A-ii, B-i, C-iv, D-iii
- (c) A-iv, B-ii, C-i, D-iii
- (d) A-ii, B-iv, C-i, D-iii

(12) Monodelphus anther present in

- (a) Cypreceae family
- (b) Malvaceae family
- (c) Anonaceae family
- (d) Convolulaceae family

(13) A major application of embryo culture is

- (a) Production of embryoids
- (b) Overcoming hybridisation barriers
- (c) Induction of somaclonal variations
- (d) Clonal propagation

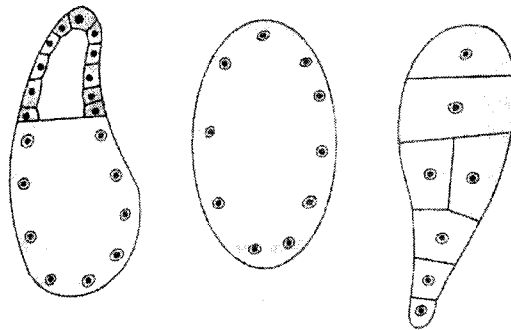
(14) Which is the following plant of Convolvulaceae family ?

- (a) *Digera muricata* (b) *Tecoma stans*
(c) *Ipomoea aquatica* (d) *Calotropis procera*

(15) Which family posses gynandrophore ?

- (a) Asteraceae (b) Capparidaceae
(c) Bignoneaceae (d) Amranthaceae

(16) Select the correct order of endosperm types



- (a) Cellular, helobial, free nuclear
(b) Cellular, free nuclear, helobial
(c) Helobial, free nuclear, cellular
(d) Free nuclear, cellular, helobial
(e) Free nuclear, helobial, cellular

(17) The sporophyte of *Gnetum* resembles to

- (a) Algae (b) Bryophyte
(c) Fungi (d) Dicotyledones of angiosperms

(18) *Gnetum* mostly occurs in which region?

- (a) Rain forest (b) Dry forest
(c) Tropical forest (d) Deciduous forest

(19) Ephedra is widely spread in which zone?

- (a) Northern and Southern hemisphere
- (b) Northern and Eastern hemisphere
- (c) Eastern and Western hemisphere
- (d) Southern and Western hemisphere

(20) A diameter of the stem of Lyginopteris oldhamia is_____.

- (a) 2 mm – 4 cm (b) 2 mm – 4 mm
- (c) 2 cm – 4 cm (d) none of these

2 (a) Give the Answer in short : (any **three**) **6**

- (1) Describe : Male cone of Ephedra.
- (2) Give the name of the 4 species of Ephedra.
- (3) External features of Cycadeoidea.
- (4) Explain Anatomy : leaf of Lyginopteris.
- (5) Explain the structure of ray and disc florets in a capetulum.
- (6) Give only two scientific name of family Polygonaceae.

(b) Give the Answer in brief : (any **three**) **9**

- (1) Describe : Female cone of Ginkgo.
- (2) Discuss the three aims of taxonomy.

- (3) How would you distinguish between Capparidaceae:
and Nyctaginaceae?
- (4) Write short note : Development of endosperm.
- (5) Write taxonomic characters of the Bougainvillea.
- (6) Give the six silent features of Cypreceae family.
- (c) Describe in detail : (any **two**) **10**
- (1) Write an essay on the origin of angiosperms.
- (2) Describe : Reproduction in Gnetum.
- (3) Discuss the method of embryo culture.
- (4) Describe the systematic position of family Moraceae.
- (5) Explain mature monocot embryo.
- 3** (a) Give the Answer in short : (any **three**) **6**
- (1) Describe: Male cone of Ginkgo.
- (2) Describe : Anatomy of stem of Cycadeoidea with
labelled diagram.
- (3) Draw labelled diagram : Female cone of Gnetum.
- (4) Write short note : Morphology of Pentoxyle.
- (5) Describe : Anatomy of Cordites stem.
- (6) Explain the distribution of Ginkgo.
- (b) Give the Answer : (any **three**) **9**
- (1) Describe : Male cone of Gnetum.
- (2) Discuss the affinities and economic importance of
family Annonaceae.

- (3) Write explanatory notes on : Numerical taxonomy.
 - (4) Give the merits of Takhtajan's classification system.
 - (5) Discuss : Taxon, Genus.
 - (6) Describe the range of floral structure in Asteraceae.
- (c) Give the Answer in brief : (any **two**) **10**
- (1) Describe: Female cone of Ephedra.
 - (2) Give the outline of Bentham and Hooker classification.
 - (3) Write explanatory notes on : Dicot embryo.
 - (4) Give the difference between Bentham and Hooker classification and Engler and prental classification.
 - (5) Explain the taxonomic categories.
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