



**SHRI S. H. KELKAR COLLEGE OF ARTS, COMMERCE & SCIENCE, DEVGAD**

**F.Y. B.Sc. SEM – I EXAMINATION, OCT 2023**

**F.Y. B.Sc Botany Paper – II**

**100 mark**

**USBO102**

**Duration – 3 hours**

**N.B. : (1) All questions are compulsory.**

**(2) Figures to the right indicate full marks.**

**(3) Draw neat and labeled diagrams wherever necessary.**

**Q. 1 A) Choose the correct options from the following.**

**(10)**

**(a) The dark reaction of the photosynthesis takes place in \_\_\_\_\_.**

- (i) Grana of chloroplast (ii) Stroma of chloroplast  
(iii) membrane of mitochondrion (iv) Lysosomes

**(b) Cell wall is absent in \_\_\_\_\_.**

- (i) both plant and animal cells (ii) animal cells (iii) plant cells (iv) bacterial cell

**(c) Middle lamella of plant cell wall is mainly composed of \_\_\_\_\_.**

- (i) Cellulose (ii) Pectin (iii) hemicellulose (iv) lignin

**(d) Pectin a polysaccharide constituting the middle lamella of plant cell wall is generally present in the form of \_\_\_\_\_.**

- (i) Sodium pectate (ii) Calcium pectate (iii) Potassium pectate (iv) Zinc pectate

**(e) \_\_\_\_\_ is the basic fundamental unit of organisms and their environment interacting with each other and with their components.**

- (i) Ecology (ii) Ecosystem (iii) Biotic Community (iv) Succession

**(f) Light, temperature, water, etc. are \_\_\_\_\_ in ecosystem.**

- (i) physical factors (ii) Chemical factors (iii) Inorganic factor (iv) Organic factors

**(g) The amount of inorganic substances present at any given time in an ecosystem is designated as the \_\_\_\_\_.**

- (i) Standing stand (ii) Standing crops  
(iii) standing state (iv) Standing minerals

**(h) A cross between two individuals with one pair of contrasting characters is called as \_\_\_\_\_.**

- (i) Monohybrid ratio (ii) Monohybrid cross  
(iii) Dihybrid ratio (iv) Back cross

**(i) What is the best example of co-dominance in human?**

- (i) Skin color (ii) ABO blood group (iii) Hair color (iv) Eye color

**(j) Which from the following is the best example of recessive epistasis?**

- (i) Coat colour in mice (ii) Fruit colour in summer squash  
(iii) Flower colour in sweet pea (iv) Awn in rice

**B) Answer the following in one sentence.**

(10)

- (a) What is thylakoid?
- (b) Define - structural protein
- (c) Which are the building blocks of living systems?
- (d) Give the example of lotic ecosystem.
- (e) How many alleles for one trait are normally found in a genotype of a diploid organism?

**Q. 2. Answer any two from the following.**

(20)

- (a) Explain the structure of plant cell.
- (b) Describe the ultra-structure and function of chloroplast.
- (c) Describe the ultra-structure of cell wall. Add a note on its functions.
- (d) Give an account of chemical and physical composition of a plant cell wall.

**Q. 3. Answer any two from the following.**

(20)

- (a) Define ecosystem and give an account of its different components.
- (b) Discuss different components of forest ecosystem.
- (c) What is a food chain? Explain different types of food chains.
- (d) Explain energy flow in an ecosystem. Give an account of ecological models.

**Q. 4. Answer any two from the following.**

(20)

- (a) What is Monohybrid ratio? Citing suitable examples, explain variations in monohybrid ratio with reference to "Lethal genes" and "Intermediate inheritance"
- (b) Explain gene interaction with reference to comb pattern in cocks.
- (c) What is Epistasis? Explain recessive epistasis citing suitable example.
- (d) State and explain law of dominance.

**Q. 5. Write short notes on any four.**

(20)

- (a) Functions of endoplasmic reticulum
- (b) Plasmodesmata and its functions
- (c) Grassland ecosystem
- (d) Freshwater ecosystem
- (e) Dihybrid ratio
- (f) Define test cross and backcross.