



**School:** School of Science  
**Program/s:** B.Sc. Chemistry  
**Year:** 2<sup>nd</sup> **Semester:** 3<sup>rd</sup>  
**Examination:** End Semester Examination  
**Examination year:** December – 2021

Course Code: **BO 204** Course Name: **Plant Structural Biology and Physiology**  
 Date: **07/12/2021** Total Marks: **40**  
 Time: **08:30 am to 10:30 am** Total Pages: **02**

**Instructions:**

- There are total 23 questions. All questions are compulsory.
- Write only answers in the answersheet provided. No need to write questions.
- Draw neat and labelled diagrams to support your answers wherever required.
- Use of calculator is ~~permitted~~/not permitted.
- \* COs=Course Outcome mapping. # BTL=Bloom's Taxonomy Level mapping

Q. No.	Details	Marks	*COs	#BTL
Q.1	Gymnosperms lack fruit because they lack: a. Ovary b. Seed c. Embryo d. Ovule	01	CO3	2
Q.2	The innermost layer of anther is tapetum whose function is: a. Protection b. Dehiscence c. Mechanical d. Nutritional (nutrition for pollen mother cell)	01	CO5	1
Q.3	Which of the following statement is true: a. vessels are multicellular with wide lumen b. tracheids are multicellular with narrow lumen c. vessels are unicellular with narrow lumen d. tracheids are unicellular with wide lumen.	01	CO2	1
Q.4	Anomalous secondary growth is found in: a. <i>Ixora</i> b. <i>Ficus</i> c. <i>Hibiscus</i> d. <i>Salvadora</i>	01	CO5	1
Q.5	Dead cells that serve a mechanical function are called: a. Sclerenchyma b. Wood parenchyma c. Companion cells d. Collenchyma	01	CO2	1
Q.6	Plant growth in length is increased by: a. Apical meristem b. Lateral meristem c. Dermatogen d. Periblem	01	CO1	1

Q. No.	Details	Marks	*COs	#BTL
Q.7	Casparian strips are found in: a. Epidermis b. Periderm c. Endodermis d. Hypodermis	01	CO2	1
Q.8	Fibres associated with phloem: a. Wood fibres b. Bast fibres c. Hard fibres d. Surface fibres	01	CO2	1
Q.9	Bordered pits are found in: a. Vessel wall b. Sieve cells c. Sieve tube d. Companion cells	01	CO2	1
Q.10	Osmosis is defined as the process in which: a. Water diffuses from lower solute concentration to higher solute concentration b. Solution diffuses from lower concentration to higher concentration c. Active transport of ions takes place d. Passive transport of ions takes place	01	CO5	2
Q.11	Process of transpiration in plants helps in: a. Absorption of CO <sub>2</sub> b. Opening of stomata c. Upward concentration of water d. None of the above	01	CO5	2
Q.12	Name the associated structure of companion cell.	01	CO2	1
Q.13	In ..... type, the stomata surrounded by two subsidiary cells which are parallel to the longitudinal axis of pore and guard cells.	01	CO5	2
Q.14	Name the scientist(s) who classified stomata on the basis of number and arrangement of the subsidiary cells.	01	CO5	1
Q.15	Justify the given statement: Gymnosperms are heterosporous plants.	01	CO3	2
Q.16	Pollination in Gymnosperms is exclusively by .....	01	CO3	1
Q.17	Where are the bulliform cells located and what role do they play?	02	CO2	2
Q.18	Using complete sentences, briefly describe or define each of the following: i. Medullary Rays ii. Promeristem	02	CO2, CO1	1, 2
Q.19	Describe in brief some functions of trichomes.	02	CO2	2
Q.20	Based on the number and arrangement of the subsidiary cells, name the types of stomata.	04	CO2, CO5	1, 2
Q.21	Give an account of the theories regarding apical meristem.	04	CO1, CO5	1, 2
Q.22	Write anatomical differences between dicot and monocot stems.	05	CO5	1, 2
Q.23	Describe the structure of xylem (with necessary diagrams).	05	CO2	1, 2

\*\*\*\*\*End of Question Paper\*\*\*\*\*