Reg. No. | | | | | | | | |

G. VENKATASWAMY NAIDU COLLEGE (AUTONOMOUS), KOVILPATTI – 628 502.

UG DEGREE END SEMESTER EXAMINATIONS - APRIL 2025.
(For those admitted in June 2021 and later)

PROGRAMME AND BRANCH: B.Sc., BOTANY

SEM	CATEGORY	COMPONENT	COURSE CODE	COURSE TITLE
VI	PART - III	CORE	U21BO611	PLANT PHYSIOLOGY

Date & Session:24.04.2025 /FN **Time : 3 hours** **Maximum: 75 Marks**

Course Outcome	Bloom's K-level	Q. No.	SECTION – A (10 X 1 = 10 Marks) Answer ALL Questions.
CO1	K1	1.	When a solvent molecule move through a semi-permeable membrane it is called as a) Osmosis b) Imbibition c) Diffusion d) Osmotic diffusion
CO1	K2	2.	A kind of change in the guard cells that is linked with stomatal opening is a) Plasmolysis b) Flaccid c) Turgidity d) Shrinkage
CO2	K1	3.	Which among the following is used for measuring root pressure? a) Mercury manometer b) Sphygmomanometer c) Ganong's potometer d) Psychrometer
CO2	K2	4.	Initially plants absorb mineral salts through a) Diffusion b) Transpiration pull c) Imbibition d) Ion exchange
CO3	K1	5.	The cycle that is more relevant both in aerobic and anaerobic respiration is a) Citric acid cycle b) Kreb's cycle c) Glycolysis d) Alcoholic fermentation
CO3	K2	6.	The cyclic electron transport takes place in a) Pigment system I b) Pigment system II c) Mitochondria d) Cytoplasm
CO4	K1	7.	Which one of following is a natural auxin? a) 24D b) IAA c) NAA d) 2,4,5,T
CO4	K2	8.	Which one of the following is growth dormin? a) IAA b) ABA c) GA3 d) BAP
CO5	K1	9.	Which one of the following is an example for short day plants? a) Tobacco b) Soybean c) Cocklebur d) Hyoscyamus niger
CO5	K2	10.	Identify the correct statement a) Vernalization shortens the vegetative period of plants b) Vernalization enhances the vegetative period of plants c) Vernalization decreases the cold resistance of plants d) Vernalization decreases the resistance of plants to fungal diseases

Course Outcome	Bloom's K-level	Q. No.	**SECTION – B (5 X 5 = 25 Marks)** **Answer ALL Questions choosing either (a) or (b)**
CO1	K3	11a.	Briefly explain the major significance of water in the life of plants. **(OR)**
CO1	K3	11b.	Differentiate the osmotic pressure and turgor pressure.
CO2	K3	12a.	What are essential elements? Mention the three criteria of essential elements? **(OR)**
CO2	K3	12b.	Write a note on macronutrients and explain how their deficiency affects plant growth.
CO3	K4	13a.	Provide a concise account on Kreb's cycle and their significance. **(OR)**
CO3	K4	13b.	Explain the process of biological nitrogen fixation with examples of nitrogen fixing organisms.
CO4	K4	14a.	What are phytoregulators? Provide the examples for growth promoting substances. **(OR)**
CO4	K4	14b.	Illustrate and explain the sigmoid curve and Exponential curve with an example.
CO5	K5	15a.	What is photoperiodism? Differentiate short-day plants and long-day plants. **(OR)**
CO5	K5	15b.	Define seed dormancy. List the factors responsible for seed dormancy?

Course Outcome	Bloom's K-level	Q. No.	**SECTION – C (5 X 8 = 40 Marks)** **Answer ALL Questions choosing either (a) or (b)**
CO1	K3	16a.	Justify the concept of water potential of a cell. How is it related to osmotic pressure? **(OR)**
CO1	K3	16b.	Illustrate the mechanism of stomatal transpiration with respect to stomatal movements and add a note on the advantages of transpiration?
CO2	K4	17a.	Differentiate between osmotic and non-osmotic absorption of water. Explain their relative importance? **(OR)**
CO2	K4	17b.	Give a detailed account on ascent of sap with an example?
CO3	K4	18a.	Illustrate photosynthetic carbon reduction cycle (PCR) with neat sketches. **(OR)**
CO3	K4	18b.	Elaborate the various events of oxidative phosphorylation.
CO4	K5	19a.	Describe the physiological effects of ethylene and highlight the advantages of ethylene production in plants.
CO4	K5	19b.	**(OR)** List out the Physiological effects of growth dormin.
CO5	K5	20a.	What are secondary metabolites? Name any five secondary metabolites with respect to their role in plant defence. **(OR)**
CO5	K5	20b.	What is senescence? Explain the different types of senescence and its relation with programmed cell death.