

Subject Code **2023**

BOTANY(Core-13)

Question Booklet No. _____

Signature of Invigilator	To be filled in by candidate by ball-point pen only	OMR Sl. No. _____
	Roll No. _____	_____
Time of Examination	Declaration : I have read and understood the instructions given below.	
Date of Examination	Full Signature of Candidate	Full Marks : 80/50 Time : 1 hour
	Name of Candidate	

Number of Questions in the Booklet } **50/40**



UU 6th Semester Examination, 2020

INSTRUCTIONS TO CANDIDATES

- Immediately after getting the booklet read instructions carefully mentioned on the front and back page of the Question Booklet. Do not open the seals unless asked by the Invigilator.
- Write your Roll No., OMR Response Sheet No., in the specified places given above and put your signature.
- Write the subject code of the booklet in your OMR Sheet.
- Make all entries in the OMR Response Sheet as per the given instructions; otherwise OMR Response Sheet will not be evaluated.
- After opening the seals, ensure that the Question Booklet contains total no. of pages as mentioned above and printing of all the **50 / 40** questions are proper. If any discrepancy is found, inform the invigilator within **15** minutes and get the correct Question Booklet.
- For each question in the Question Booklet choose the correct option from the given four alternatives and darken the same circle in the OMR Response Sheet with Black or Blue ball-point pen.
- Darken the circle of correct answer properly; otherwise answers will not be evaluated. The candidate will be fully responsible for it.
- If more than one option is darkened for a particular question, then it will be treated as wrong answer.
- After completion of the examination, only OMR Response Sheet is to be handed over to the invigilator.

THERE IS NO NEGATIVE MARKING FOR WRONG ANSWER

Rough Work

BOTANY (CORE -13)

(Answer any 25 questions)

- 1 Chemical compounds involved in the process of metabolism is known as-----
 - (A) Metabolites
 - (B) Radicals
 - (C) Catabolites
 - (D) Intermediates
- 2 Regulation of metabolic activities is done by following ways :
 - (A) Substrate concentration
 - (B) Allosteric regulation of enzymes
 - (C) Extracellular signals such as hormones or growth factors
 - (D) All of the above
- 3 Synthesis of starch occurs within _____
 - (A) Chloroplast
 - (B) Endoplasmic reticulum
 - (C) Golgi Body
 - (D) Cytosol
- 4 The process where end products of biosynthetic pathway inhibit the activity of first enzyme.
 - (A) Feedback repression
 - (B) Feedback inhibition
 - (C) Allosteric inhibition
 - (D) Competitive inhibition
- 5 The precursors for sucrose biosynthesis are _____
 - (A) Glucose and Fructose
 - (B) UDP-Glucose and Fructose-6-phosphate
 - (C) UDP-Glucose and Fructose
 - (D) Fructose and Glucose-6-phosphate
- 6 The pigment molecule which acts as the reaction centre is :
 - (A) Carotenoid
 - (B) Phycobilins
 - (C) Anthocyanin
 - (D) Chlorophyll
- 7 Which of the following is correct sequence of movement of electrons during light dependent reactions of plants?
 - (A) P700, P680, NADP+, Water
 - (B) P680, Water, P700, NADP+
 - (C) Water, P700, NADP+, P680
 - (D) Water, P680, P700, NADP+
- 8 Chloroplast dimorphism is a characteristic feature of _____
 - (A) C4 plants
 - (B) Plants with Calvin cycle
 - (C) Only in algae
 - (D) All plants
- 9 The carbon dioxide fixation seen in many succulent plant species is _____
 - (A) CAM Pathway
 - (B) C4 Pathway
 - (C) C3 Pathway
 - (D) C2 Pathway

- 10 The correct sequence of cell organelles during photorespiration is:
- Choloroplast---ER----Dictyosomes
 - Choloroplast---Golgi bodies----Mitochondria
 - Chloroplast---Peroxisome----Mitochondria
 - Chloroplast---vacuole----Peroxisome
- 11 Photosynthesis can be described as _____
- Reductive, anabolic, endergonic process
 - Reductive, Catabolic, endergonic process
 - Oxidative, anabolic, endergonic process
 - Oxidative, catabolic, endergonic process
- 12 Which of the following accepts only 1 electron?
- Coenzyme Q
 - FMN
 - Cytochrome b
 - FAD
- 13 The organelle of chemiosmosis in cellular respiration is _____
- Nucleoplasm
 - Peroxisome
 - Chloroplast
 - Mitochondrion
- 14 As per the binding change mechanism of energy coupling proposed by Paul Boyer, what are the 3 conformations of binding sites ?
- Right, left, middle
 - Tight, loose, open
 - Strong, weak, no binding
 - High, medium, low
- 15 In Pentose phosphate pathway, the major products are _____
- Ribulose and NADP
 - Ribulose and NADH
 - Ribulose and NAD⁺
 - Ribulose and ATP
- 16 Dihydroxyacetonephosphate is rapidly and reversibly converted to _____
- Glyceraldehyde-3-phosphate
 - 1,3-bisphosphoglycerate
 - Fructose-1,6-bisphosphate
 - Fructose-6-phosphate
- 17 High concentration of glucose-6-phosphate is inhibitory to?
- Hexokinase
 - Pyruvate kinase
 - Glucokinase
 - Phosphofructokinase
- 18 The TCA cycle is an _____ pathway
- Catabolic
 - Anabolic
 - Amphibolic
 - Respiratory
- 19 Which of the following intermediates of TCA cycle act as amino acid precursors?
- Succinic acid
 - Oxaloacetic acid
 - Critic acid
 - Acetyl CoA

- 20 What form of energy is required for fatty acid biosynthesis?
- (A) ATP
 - (B) NADH
 - (C) NADPH
 - (D) FADH₂
- 21 How many molecules of acetyl CoA will be created from a 14 carbon fatty acid?
- (A) 7
 - (B) 6
 - (C) 8
 - (D) 14
- 22 What is the precursor for fatty acid synthesis?
- (A) Acetyl CoA
 - (B) Propionyl CoA
 - (C) Succinyl CoA
 - (D) Acetoacetyl CoA
- 23 How many molecules of ATP are produced from 1 molecule of a Fatty acid?
- (A) 129 molecules of ATP
 - (B) 8 molecules of ATP
 - (C) 30 molecules of ATP
 - (D) 160 molecules of ATP
- 24 Which complex is unable to pump protons across the mitochondrial membrane?
- (A) Complex I
 - (B) Complex II
 - (C) Complex III
 - (D) Complex IV
- 25 Gluconeogenesis involves the conversion of ?
- (A) Glucose to pyruvate
 - (B) Pyruvate to glucose
 - (C) Phosphoenolpyruvate to glucose
 - (D) Pyruvate to fructose
- 26 Which of the following enzyme catalyses the conversion of pyruvate to lactate?
- (A) Pyruvate reductase
 - (B) Lactate reductase
 - (C) Lactate dehydrogenase
 - (D) Pyruvate dehydrogenase
- 27 In plants and some microorganisms, the conversion of fats to carbohydrates occur through
- (A) HSK Pathway
 - (B) Krebs cycle
 - (C) Citrate Cycle
 - (D) Glyoxylate cycle
- 28 What is the starting material for gluconeogenesis?
- (A) Amino acids
 - (B) Fats
 - (C) Lipids
 - (D) Oxaloacetate
- 29 Which carbon atoms on a fatty acid molecule have the hydrogen atoms removed from them in the first step of beta oxidation?
- (A) The alpha and beta Carbon atoms
 - (B) The first 2 carbon atoms
 - (C) The last 2 carbon atoms
 - (D) The Carbon atoms with a double bond
- 30 In the glycolytic pathway, the breakdown of one molecule of glycogen to pyruvic acid results in ---ATPs.
- (A) 2
 - (B) 3
 - (C) 6
 - (D) 14

- 31 The nodule forming bacteria are _____
- (A) Azotobacter
 - (B) Nitrobacter
 - (C) Clostridium
 - (D) Rhizobium
- 32 Conversion of nitrogen to ammonia or nitrogenous compounds is termed as _____
- (A) Nitrogen fixation
 - (B) Nitrification
 - (C) Denitrification
 - (D) Nitrogen assimilation
- 33 Dinitrogenase is a _____
- (A) Monomer
 - (B) Dimer
 - (C) Tetramer
 - (D) Trimer
- 34 The root nodules of legumes contain a red pigment which has high affinity for oxygen:
- (A) Nod haemoglobin
 - (B) Leg haemoglobin
 - (C) Haemoglobin
 - (D) Bacterial haemoglobin
- 35 The major enzymes involved in biological N₂ fixation are:
- (A) Nitrogenase and hydrogenase
 - (B) Nitrogenase and hexokinase
 - (C) Nitrogenase and hydrolase
 - (D) Nitrogenase and peptidase
- 36 A hormone or ligand can be considered as:
- (A) First messenger
 - (B) Second messenger
 - (C) Third messenger
 - (D) Fourth messenger
- 37 Name the largest family of cell surface receptor.
- (A) Ion channel receptor
 - (B) GPCR
 - (C) Enzyme linked receptor
 - (D) Nuclear receptor
- 38 Which of the following catalyses cutting of PIP₂ into 2 moles of IP₃ and DAG in cell signalling?
- (A) Phosphokinase C
 - (B) Lipokinase
 - (C) Phospholipase C
 - (D) Phosphodiesterase C
- 39 Which of the following is a second messenger?
- (A) Diacylglycerol
 - (B) Inositol 1,4,5- triphosphate
 - (C) Both a and b
 - (D) Phospholipase
- 40 GPCR is comprised of:
- (A) 7 transmembrane helices
 - (B) 8 transmembrane helices
 - (C) 9 transmembrane helices
 - (D) 10 transmembrane helices

