



## Hemchandracharya North Gujarat University PHD Exam

Exam Name : HNGU\_PHD\_Botany\_30.01.2024\_09.30 AM TO 11:30 AM

Exam Date : 2024-01-30

Exam Time : 09:30:00 AM To 11:30:00 AM

Total Marks : 100

**Note : The correct answer is indicated by the green color. સાચો જવાબ લીલા રંગ દ્વારા સૂચવવામાં આવે છે.**

### Question List:

#### Section: Section-A

- What does CPU stand for? [ 1 Mark ]
  - **Central Processing Unit**
  - Computer Processing Unit
  - Central Printing Unit
  - Computer printing Unit
- What does "CSV" stand for in the context of data entry and storage? [ 1 Mark ]
  - **Comma Separated Values**
  - Centralized Storage Value
  - Computer System Validation
  - Concurrent Sequential Values
- What does RAM stand for in the context of computers? [ 1 Mark ]
  - **Random Access Memory**
  - Read-Only Memory
  - Rapid Access Memory
  - Remote Access Memory
- Which software application is commonly used for creating and editing spreadsheets? [ 1 Mark ]
  - Word
  - **Excel**
  - PowerPoint
  - Outlook
- In computing, what does GUI stand for? [ 1 Mark ]
  - **Graphical User Interface**
  - General User Interface
  - Global User Interface
  - Graphical Unifying Interface
- Which of the following is a correct sentence? [ 1 Mark ]
  - She don't like coffee.

- He doesn't likes tea.
- They doesn't have a car.
- **I don't have a cat.**

• **Choose the correct spelling [ 1 Mark ]**

- Accommodation
- Accomodation
- **Accommodation**
- Acomodation

• **What is the correct usage of "their" in a sentence? [ 1 Mark ]**

- They're going to the store.
- There is a cat over here.
- **Their cat is black.**
- They're is a common contraction.

• **Which sentence is grammatically correct? [ 1 Mark ]**

- Me and my friend are going to the movies
- **My friend and I are going to the movies**
- Me is going to the movies with my friend.
- My friend and me are going to the movies.

• **the correct usage of the word "effect" in a sentence: [ 1 Mark ]**

- The new law will have a positive affect on the economy.
- The medication had an immediate affect.
- **The rain had no affect on the outdoor event.**
- The movie had a powerful affect on the audience.

• **If every triangle is a polygon and some polygons have four sides, which of the following statements is true? [ 1 Mark ]**

- Every triangle has four sides
- Some triangles have four sides
- **No triangles have four sides.**
- All polygons have three sides.

• **If CAT is coded as 312, how is DOG coded? [ 1 Mark ]**

- 415
- **513**
- 214
- 612

• **In a certain code, "PHD" is written as "KMG." How is "RESEARCH" written in that code? [ 1 Mark ]**

- QCFXMPBE
- **QCFVXMPB**
- QCFVXOBP
- QCFVXPBM

• **Arrange the following words in alphabetical order: Experiment, Analysis, Data, Conclusion. [ 1 Mark ]**

- **Analysis, Conclusion, Data, Experiment**
- Conclusion, Data, Experiment, Analysis
- Analysis, Data, Conclusion, Experiment
- Conclusion, Experiment, Analysis, Data

• **If every rose is a flower and some flowers fade quickly, which of the following statements is true? [ 1 Mark ]**

- Every rose fades quickly.
- **Some roses fade quickly.**
- No roses fade quickly.
- Flowers never fade quickly.

- **What is the primary goal of basic research? [ 1 Mark ]**
  - To solve immediate practical problems
  - **To generate new knowledge and understanding**
  - To develop new technologies
  - To make a profit
  
- **Which of the following is a characteristic of scientific research? [ 1 Mark ]**
  - Subjectivity
  - Lack of systematic inquiry
  - **Reproducibility**
  - Bias
  
- **What are the essential steps in the research process? [ 1 Mark ]**
  - Data analysis, hypothesis testing, conclusion
  - Literature review, data collection, report writing
  - **Formulating a research question, hypothesis, data collection, analysis, interpretation**
  - Observation, experimentation, theory development
  
- **What distinguishes applied research from basic research? [ 1 Mark ]**
  - Applied research is more theoretical
  - Basic research focuses on practical applications
  - **Applied research aims to solve immediate problems**
  - Basic research is industry-oriented
  
- **What is the purpose of experimental design in research? [ 1 Mark ]**
  - To confuse participants
  - To ensure random sampling
  - **To control variables and establish causation**
  - To create a complex study design
  
- **What is the purpose of setting up objectives in a research study? [ 1 Mark ]**
  - To confuse researchers
  - **To provide a roadmap for the study**
  - To ensure statistical significance
  - To hide the study's purpose
  
- **What is the null hypothesis in hypothesis testing? [ 1 Mark ]**
  - A hypothesis that is never tested
  - The hypothesis being tested for statistical significance
  - **A statement of no effect or no difference**
  - A hypothesis with a high level of significance
  
- **What does the level of significance represent in hypothesis testing? [ 1 Mark ]**
  - **The probability of rejecting a true null hypothesis**
  - The probability of accepting a false null hypothesis
  - The confidence interval
  - The power of the test
  
- **Which statistical test is used for categorical data and expected vs. observed frequencies? [ 1 Mark ]**
  - t-test
  - ANOVA
  - **Chi-square test**
  - Regression analysis
  
- **What is the purpose of simple linear regression analysis? [ 1 Mark ]**
  - To compare means of multiple groups
  - **To analyze relationships between two continuous variables**
  - To assess the effect of categorical variables
  - To test the difference between observed and expected frequencies

- **Which section of a research paper provides an overview of the entire study, including the research question and methodology? [ 1 Mark ]**
  - Abstract
  - **Introduction**
  - Discussion
  - Conclusion
  
- **What is the purpose of a research proposal? [ 1 Mark ]**
  - To report research findings
  - To summarize literature reviews
  - **To outline planned research activities**
  - To discuss limitations of a study
  
- **In a research paper, what is the primary function of the abstract? [ 1 Mark ]**
  - To present detailed results
  - To introduce the author
  - **To summarize the study's key points**
  - To provide references
  
- **What is the primary purpose of a literature review in a research paper? [ 1 Mark ]**
  - To discuss the limitations of the study
  - To present the author's opinions
  - **To provide background and context for the study**
  - To describe the study's methodology
  
- **What does the term "APA" refer to in the context of research writing? [ 1 Mark ]**
  - **American Psychology Association**
  - Advanced Publication Authorship
  - Academic Paper Analysis
  - Authorship and Publication Assessment
  
- **What is the primary purpose of the acknowledgments section in a research report? [ 1 Mark ]**
  - To criticize the work of others
  - **To thank those who contributed to the study**
  - To list statistical analyses
  - To present the study's limitations
  
- **What is the purpose of a thesis in academic research? [ 1 Mark ]**
  - To summarize existing research
  - **To present new research findings**
  - To criticize other researchers
  - To advertise a conference
  
- **In scientific writing, what does "APA style" primarily guide the author in? [ 1 Mark ]**
  - **Formatting and citation**
  - Language fluency
  - Experimental design
  - Statistical analysis
  
- **What is the primary goal of a conference report? [ 1 Mark ]**
  - To review existing literature
  - **To present findings to a scientific community**
  - To critique other researchers' work
  - To summarize a book
  
- **What does the term "Abstract" refer to in the context of a research paper? [ 1 Mark ]**
  - **A brief summary of the entire paper**
  - A section where the author expresses personal opinions
  - A detailed analysis of statistical results

- A section for thanking contributors
- **What does the "References" section of a research paper typically include? [ 1 Mark ]**
  - Acknowledgments
  - A list of figures and tables
  - **Citations of sources used in the paper**
  - A summary of the study's key points
- **What is the purpose of the "Declaration" section in a research report? [ 1 Mark ]**
  - To declare the author's opinions
  - **To declare conflicts of interest**
  - To declare the study's limitations
  - To declare the importance of the research
- **What is the purpose of a "Review Paper" in scientific literature? [ 1 Mark ]**
  - To criticize other researchers' work
  - **To provide an overview and synthesis of existing research**
  - To present new research findings
  - To list statistical analyses
- **Which section of a research paper typically contains detailed explanations of the research methods? [ 1 Mark ]**
  - Introduction
  - Discussion
  - **Methods**
  - Conclusion
- **What does "MCQ" stand for in the context of testing? [ 1 Mark ]**
  - Multiple Character Question
  - Most Challenging Query
  - **Multiple Choice Question**
  - Main Conclusion Quotient
- **In a scientific presentation, what is the purpose of the "Conclusion" slide? [ 1 Mark ]**
  - To introduce the research question
  - To provide an overview of the literature review
  - **To summarize key findings and implications**
  - To list statistical methods used
- **What is the primary purpose of the "List of Figures" section in a research report? [ 1 Mark ]**
  - To present statistical analyses
  - To provide an overview of the literature
  - To acknowledge contributors
  - **To guide readers to visual elements in the document**
- **What is the primary purpose of the "Conference Report" in scientific writing? [ 1 Mark ]**
  - To critique conference presentations
  - **To provide a summary of a scientific conference**
  - To discuss the limitations of a study
  - To present new research findings
- **In statistical terms, what does "ANOVA" stand for? [ 1 Mark ]**
  - Analysis of Non-Variable Attributes
  - **Analysis of Variance**
  - Association of Variables and Attributes
  - Average Number of Variables Analyzed
- **What does the term "Thesis" refer to in academic writing? [ 1 Mark ]**
  - A summary of a book
  - A detailed literature review

- **A document presenting original research**
  - A critique of existing research
- **What is the primary purpose of the "Summary" section in a research report? [ 1 Mark ]**
    - To present detailed statistical analyses
    - **To summarize key findings and conclusions**
    - To acknowledge contributors
    - To provide an overview of the literature
- **What section of a document typically provides a structured outline of its contents? [ 1 Mark ]**
    - Introduction
    - **Table of Contents**
    - Acknowledgments
    - Statistical Analyses
- **What is the purpose of a "Book Review" in scientific literature? [ 1 Mark ]**
    - To present new research findings
    - To provide an overview and synthesis of existing research
    - To critique other researchers' work
    - **To summarize a book**
- **What does the term "IRB" stand for in the context of research? [ 1 Mark ]**
    - **Institutional Review Board**
    - Independent Research Bureau
    - International Research Body
    - Investigative Review Bureau
- **In a scientific presentation, what is the purpose of the "Title Page" slide? [ 1 Mark ]**
    - To list statistical analyses
    - To acknowledge contributors
    - To provide an overview of the literature
    - **To introduce the presentation and its title**

### Section: Section-B

- **The sap of a plant cell has an osmotic potential of -10 bars and there is a wall pressure of 2 bars. When this cell is placed in a solution with an osmotic potential of -3 bars, the force causing water to enter the cell is \_\_\_\_ [ 1 Mark ]**
  - -8 bar
  - -7 bar
  - **-5 bar**
  - -3 bar
- **If  $^{32}\text{P}$ -labeled inorganic phosphate were introduced to RBCs undergoing glycolysis then which of the following glycolytic intermediate would be radiolabeled? [ 1 Mark ]**
  - Fructose-1, 6-bisphosphate
  - **1, 3- bisphosphoglycerate**
  - Glyceraldehyde-3-phosphate
  - Glucose-6-phosphate
- **The plant hormone, Gibberellic Acid is generally NOT associated with\_\_\_\_ [ 1 Mark ]**
  - Stem elongation
  - Parthenocarpy
  - **Parthenogenesis**
  - Malt production
- **Sexual Reproduction in plants P. involve gametes formation and fertilization Q. occurs through formation of sexual spores R. occurs through formation of meiospores S. produce genetically identical offspring [ 1 Mark ]**
  - P and Q

- Q, R and S
  - **P, Q and R**
  - P, Q and S
  
- **Active transport of ions across the membrane of a root hair cell can be assumed to be taking place if P. the cell produces more glutathione Q. the cell has mitochondria. R. the uptake of ions stops when cyanide is added. S. the uptake of ions is against the concentration gradient. [ 1 Mark ]**
  - P and R
  - **R and S**
  - Q and R
  - Q and S
  
- **According to the widely accepted acid growth hypothesis, hydrogen ions act as the intermediate between auxin and cell wall loosening. Which of the following is not a part of the acid growth hypothesis? P. Lowered pH results in the breakage of cross-links between cellulose microfibrils. Q. Auxin activated proton pumps stimulate cell division in meristems. R. Auxin increases the osmotic uptake of water across the plasma membrane and then increases the turgor pressure in the cell. S. The turgor pressure of the cell exceeds the restraining pressure of the loosened cell wall and the cell takes up water and elongates. [ 1 Mark ]**
  - P, Q and R
  - **Q and R**
  - Q and S
  - P and S
  
- **The following statements are made to describe auxin signal transduction pathway, from receptor binding to the physiological response: P. Auxin response factors (ARFs) are nuclear proteins that bind to auxin response elements to activate or repress gene transcription. Q. Binding of AUX/IAA proteins to the auxin response factors (ARF) protein blocks its transcription regulation. R. Auxin binding to TIRI promotes ubiquitin-mediated degradation and removal of AUX/IAA proteins. S. Auxin binding to auxin response factors (ARFs) causes their destruction by the 26S proteasome pathway. Which one of the following combinations of above statements is correct? [ 1 Mark ]**
  - **P, Q and R**
  - P, R and S
  - Q, R and S
  - P, Q and S
  
- **When a plant of chromosomal type aa pollinates a plant of type AA, what chromosome constitution of embryo and endosperm is expected in the resulting seeds? [ 1 Mark ]**
  - **Diploid zygote of type Aa and triploid endosperm of type AAa.**
  - Diploid zygote of type aa and triploid endosperm of type Aaa.
  - Diploid zygote of type AA and triploid endosperm of type AAa.
  - Diploid zygote of type Aa and triploid endosperm of type aaa.
  
- **Group I (Hormone)**  
**Group II (Functions)**  
**P. Gibberellin ---- 1. Phototropism and gravitropism**  
**Q. IAA ----- 2. Stomatal movement**  
**R. Cytokinin --- 3. Delay of senescence**  
**S. Ethylene --- 4. Combating water deficit**  
**5. Seed Germination**  
**6. Ripening of fruits**  
**[ 1 Mark ]**
  - P-6, Q-4, R-1, S-2
  - **P-5, Q-1, R-3, S-6**
  - P-3, Q-4, R-5, S-1
  - P-4, Q-3, R-1, S-5
  
- **A cell, which is very active in the synthesis and secretion of proteins, would be expected to have [ 1 Mark ]**
  - Equal amount of SER and RER
  - **More rough than SER**
  - More smooth than RER
  - Neither SER or RER



- In *clavata* (*clv*) mutant of *Arabidopsis*, shoot apical meristem (SAM) size as well as expression of *wuschel* (*wus*) are increased whereas SAM size is reduced in *wus* mutant plants. With this information, choose the correct statement which best describes the function of *wus* and *clv* genes. [ 1 Mark ]
  - *clv* positively regulates *wus* expression and negatively regulates SAM size
  - ***clv* negatively regulates *wus* expression and *wus* positively regulates SAM size.**
  - *wus* negatively regulates SAM and *c/v* expression.
  - *wus* and *c/v* independently regulate SAM size.
- For each glucose molecule that is broken down in glycolysis there is a net gain of \_\_\_\_\_ [ 1 Mark ]
  - 1 ATP molecule
  - **2 ATP molecule**
  - 3 ATP molecule
  - 4 ATP molecule
- Marker enzyme of Golgi apparatus is [ 1 Mark ]
  - Acetyl-CoA synthetase
  - Pyruvate kinase
  - **Galactosyl transferase**
  - Cytochrome oxidase
- Suppose [4-<sup>14</sup>C] oxaloacetate is fed to mitochondria. After one turn of the citric acid cycle, which carbon(s) of succinate would be labeled? [ 1 Mark ]
  - **None**
  - Equally distributed between C-1 and C-4
  - Equally distributed between C-2 and C-3
  - C-4
- Inside an active mitochondrion, most electrons follow which pathway? [ 1 Mark ]
  - Glycolysis → NADH → oxidative phosphorylation → ATP → oxygen
  - Krebs cycle → FADH<sub>2</sub> → electron transport chain → ATP
  - Electron transport chain → Krebs cycle → ATP → oxygen
  - **Krebs cycle → NADH → electron transport chain → oxygen**
- Nitrate reductase is an important enzyme for nitrate assimilation. Which of the following statements about nitrate reductase enzyme are correct?
 

P. Nitrate reductase of higher plants is composed of two identical subunits.

Q. It contains three prosthetic groups, heme, FAD and Mo.

R. It requires reducing agent NAD(P)H.

S. It contains two prosthetic groups, Fe<sub>4</sub>S<sub>4</sub> and siroheme.

 [ 1 Mark ]
  - **P, Q and R**
  - P, R and S
  - Q, R and S
  - P, Q and S
- All of the following statements about NAD<sup>+</sup> are true except [ 1 Mark ]
  - NAD<sup>+</sup> is reduced to NADH during both glycolysis and the Krebs cycle.
  - **NAD<sup>+</sup> has more chemical energy than NADH.**
  - NAD<sup>+</sup> is reduced by the action of enzymes called dehydrogenases.
  - NAD<sup>+</sup> can receive electrons for use in oxidative phosphorylation.
- In aerobic cellular respiration, Which generates more ATP, substrate level phosphorylation or chemiosmosis? [ 1 Mark ]
  - Substrate level phosphorylation
  - **Chemiosmosis**
  - Both generate the same amount of ATP
  - Neither generates any ATP
- In pentose phosphate pathway [ 1 Mark ]
  - Transaldolase catalyzes the transfer of C<sub>3</sub> units.



- Transketolase catalyzes the transfer of C2 units.
  - Transketolase activity is dependent on TPP.
  - **All of the above statements are correct.**
- **When DCPIP (Hill reagent) accepts electron from H<sub>2</sub>O, its colour changes to [ 1 Mark ]**
  - Blue
  - Red
  - **Colourless**
  - None
- **The experimental material used by Van Neil, to prove that O<sub>2</sub> comes out from water was [ 1 Mark ]**
  - Chlorella pyrenoidosa
  - Scenedesmus
  - Blue green algae
  - **Chromaticum vinosum**
- **Which of the following cell components is not part of the cytoskeleton of eukaryotic cells? [ 1 Mark ]**
  - Microfilaments
  - **Mitochondria**
  - Intermediate filaments
  - Microtubules
- **Assimilatory powers produced during photosynthesis are [ 1 Mark ]**
  - RUBP and Rubisco
  - H<sub>2</sub>O and O<sub>2</sub>
  - **ATP and NADPH**
  - C<sub>6</sub>H<sub>12</sub>O<sub>6</sub> and PGAL
- **Oxygen evolving complex, involved in photolysis of water contain [ 1 Mark ]**
  - Mn<sup>2+</sup>, Cl<sup>-</sup>, K<sup>+</sup>
  - Mg<sup>2+</sup>, Cl<sup>-</sup>, Ca<sup>2+</sup>
  - Mn<sup>2+</sup>, Cl<sup>-</sup>, CO
  - **Mn<sup>2+</sup>, Cl<sup>-</sup>, Ca<sup>2+</sup>**
- **Photoexcited P680 and P700 [ 1 Mark ]**
  - Have the same chemical properties of ground state molecules
  - Are strong oxidants-taking electrons from donor molecules
  - **Are strong reductants-giving electrons to acceptor molecules**
  - Transfer excited state energy to another molecule
- **Which one of the following parts of root is involved in perceiving gravity? [ 1 Mark ]**
  - Quiescent center
  - Endodermis
  - **root cap**
  - Elongation zone
- **Cadherin is [ 1 Mark ]**
  - **Ca<sup>2+</sup> dependent transmembrane glycoprotein**
  - Responsible for attachment of cell to extra cellular matrix.
  - Protein responsible for heterophilic interaction.
  - Structural component of gap-junction
- **In certain plants, the mechanism where timing of anther dehiscence and stigma receptivity do not coincide to avoid self-pollination is called \_\_\_\_ [ 1 Mark ]**
  - **dichogamy**
  - herkogamy
  - monoecy
  - dioecy

- Jasmonate is known to inhibit root growth while auxin facilitates root growth. Upon infection with pathogenic bacteria that produce coronatine, we may expect the following in plants: P. Upregulation of COI-1 gene and inhibition of root growth. Q. Upregulation of AuxI-1 gene and inhibition of root growth. R. Inhibition of AuxI-1 gene and promotion of root growth. S. Inhibition of COI-1 gene and promotion of root growth. Which one of the following is correct? [ 1 Mark ]**

  - P, Q and R
  - **Only P**
  - Only Q
  - Only R
- Sieve elements of phloem conduct sugars and other organic materials throughout the plant. The following statements were made about characteristics of sieve elements in seed plants: P. Angiosperms contain sieve plate pores. Q. There are no sieve plates in gymnosperms. R. P-protein is present in all eudicots and many monocots. S. There is no P-protein in angiosperms. Which of the following combination is correct? [ 1 Mark ]**

  - Q, R and S
  - **P, Q and R**
  - P, Q and S
  - P, R and S
- Which one of the following statements related to components/features of senescence in plants is incorrect? [ 1 Mark ]**

  - Programmed cell death in plants may generate functional cells or tissues.
  - **Senescence can be induced by application of cytokinins and delayed by overexpression of salicylic acid.**
  - Plants defective in autophagy demonstrate accelerated plant senescence.
  - Leaf senescence is regulated by NAC and WRKY genes families.
- Which one of the following secondary metabolites is characterized by the presence of a central carbon atom that is bound by a sulphur to a glycone group, and by a nitrogen to a sulfonated oxime group? [ 1 Mark ]**

  - Alkaloids
  - Terpenes
  - Phenolics
  - **Glucosinolates**
- In peroxisome, during oxidation of fatty acids electrons and protons transferred to FAD and NAD<sup>+</sup>. Reduced FAD finally transfer the electrons and protons to O<sub>2</sub> and forms [ 1 Mark ]**

  - H<sub>2</sub>O
  - H<sub>2</sub>O<sub>2</sub>
  - **CH<sub>3</sub>OH**
  - None of these
- In a study, it was found that K<sup>+</sup> ion concentration in root cells of a pea plant was ~75 times greater than that of the nutrient medium in which the plant was grown. This indicated that K<sup>+</sup> ions were absorbed from the medium. [ 1 Mark ]**

  - Because the plant was grown continuously in the dark.
  - **By an active, energy-dependent process.**
  - By simple diffusion.
  - Through plasmodesmatal connections between the epidermis and the medium.
- Which of the following compounds is not a part of alkaloid class of secondary metabolites? [ 1 Mark ]**

  - **Lignin**
  - Indole
  - Tropane
  - Pyrrolidine
- Which one of the following plant hormones uses the two component histidine kinase receptor system for signal transduction? [ 1 Mark ]**

  - Auxin
  - Gibberellin

- **Cytokinin**
  - Abscisic acid
- Which one of the following photoreceptors plays a role in day length perception and circadian rhythms? [ 1 Mark ]
  - **Zeitlupe family**
  - Cryptochromes
  - Phototropins
  - UV resistance locus 8
- Which one of the following is the correct order of electron transport during light reaction in the thylakoid membrane of chloroplast? [ 1 Mark ]
  - P680 → Cytochrome b6f → PC → PQ
  - P680 → PC → Cytochrome b6f → PQ
  - P680 → PQ → PC → Cytochrome b6f
  - **P680 → PQ → Cytochrome b6f → PC**
- Which of the following is the most abundant protein in leaves? [ 1 Mark ]
  - Chlorophyll a/b binding protein
  - ATP synthase
  - **Ribulose-1,5 bisphosphate carboxylase**
  - Globulins
- Inhibition of photosynthesis in the presence of O<sub>2</sub> in C<sub>3</sub> plants is called [ 1 Mark ]
  - Pasteur effect
  - **Warburg effect**
  - Decker effect
  - Hexose monophosphate shunt
- When Rubisco acts as an oxygenase [ 1 Mark ]
  - **Phosphoglycerate and phosphoglycolate are produced**
  - Phosphoenopyruvate is oxidized
  - Net carbon fixation is enhanced
  - It must mean that the plant is deprived of CO<sub>2</sub>
- In C<sub>4</sub> pathway, the site for oxidative decarboxylation is [ 1 Mark ]
  - Cytoplasm of bundle sheath
  - Chloroplast at mesophyll cell
  - **Chloroplast at bundle sheath**
  - Cytoplasm of mesophyll cell
- At CO<sub>2</sub> compensation point, net efflux of CO<sub>2</sub> from plant is [ 1 Mark ]
  - Maximum
  - **Zero**
  - Minimum
  - None of the above
- Translocation of organic materials in plant is best explained by [ 1 Mark ]
  - Active transport
  - Transpiration pull
  - Imbibition theory
  - **Mass flow hypothesis**
- Which one of the following compounds is generally translocated in the phloem? [ 1 Mark ]
  - **Sucrose**
  - D-Glucose
  - D-Mannose
  - D-Fructose
- In CAM plants, CO<sub>2</sub> acceptor in the night is [ 1 Mark ]

- RUBP
- **PEP**
- OAA
- PGA

• **Synthesis of sucrose during photosynthesis occurs in [ 1 Mark ]**

- Chloroplast
- **Cytosol**
- Vacuoles
- Amyloplast

• **Which of the following mechanisms is not involved in providing photoprotection to plants? [ 1 Mark ]**

- Degradation of D1 protein
- Zeaxanthin formation
- **Photolysis of water**
- Thermal dissipation

• **What would be the result of meiosis in commercial bananas, which are triploid? [ 1 Mark ]**

- Aneuploid gametes
- Triploid gametes
- 50% diploid and 50% haploid gametes
- **No gametes at all**

• **Which of the following set of cell organelles are involved in the biosynthesis of jasmonic acid through octadecanoid signalling pathway? [ 1 Mark ]**

- **Chloroplast and peroxisomes**
- Chloroplast and mitochondria
- Mitochondria and peroxisomes
- Golgi bodied and mitochondria