

**PARUL UNIVERSITY**  
**COLLEGE OF AGRICULTURE**

**B.Sc.(Hons.) Agriculture Summer 2017 - 18 Examination**

Semester: 1

Date: 06/06/2018

Subject Code: 20110101

Time: 2.00 pm to 4.30 pm

Subject Name: Fundamentals of Plant Biochemistry and Biotechnology

Total Marks: 60

**Instructions**

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

**Q.1 Do as Directed.****A. Fill in the blanks. (Each of 1.00 marks)****(10)**

1. Man-made cereal (Triticale) given by \_\_\_\_\_ scientist.
2. DNA contains \_\_\_\_\_ sugar.
3. DNA replication takes place during \_\_\_\_\_ phase.
4. \_\_\_\_\_ are also known as genetically modified or GM crops.
5. \_\_\_\_\_ contains a gene or genes which have been artificially inserted instead of a plant acquiring them through pollination.
6. The first genetically modified plant an antibiotic-resistant \_\_\_\_\_ plant.
7. \_\_\_\_\_ is made up of glucose & galactose.
8. \_\_\_\_\_ country contribute 33% of soya bean.
9. \_\_\_\_\_ toxin that protects it against insect pests.
10. \_\_\_\_\_ ethanol used for sterilization of explants.

**B. Multiple choice type questions. (Each of 1.00 mark)****(10)**

1. Golden rice is a good source of
 

a) Vit-B	c) Vit-D
b) Vit-A	d) Vit-E
2. In which of the following crop transgenic variety Flavr Savr was first reach to market
 

a) Tobacco	c) Tomato
b) Rice	d) None
- 3 The technique which used to recover hybrid from sexually incompatible species
 

a) In vitro fertilization	c) In vitro pollination
b) Embryo culture	d) Unfertilized ovule
- 4 Nucleotide is made up of
 

a) N-base + Sugar + Phosphate	c) N-base + Phosphate
b) N-base + Sugar	d) Sugar + Phosphate
- 5 Nucleic acids are polymer of repeating units of
 

a) Peptide bond	c) - CONH linkage
b) 3'-5' phosphodiester linkage	d) Azo bond
- 6 The number of hydrogen bonds present between each G:C base pair
 

a) 2	c) 3
b) 4	d) 5
- 7 Formation of the RNA molecule from the DNA is called
 

a) Transcription	c) Translation
b) Elongation	d) Replication
- 8 DNA is polymer of
 

a) Amino acid	c) Nucleosides
b) Nucleotides	d) None of the above
- 9 The plant developed with a foreign gene is
 

a) Transplanted plant	c) PMO
b) Transformed plant	d) Transgenic plant
- 10 The *Cry-I* protein are insecticidal to
 

a) <i>Lepidopteran</i> insect	c) <i>Dipteran</i> insect
b) <i>Coleopteran</i> insect	d) <i>All</i>

**Q.2 Do as Directed.**

**A. Define the following. (Any five)**

**(05)**

1. Plant biotechnology
2. In Vivo
3. Transcription
4. Callus culture
5. Organogenesis
6. Fertilization
7. Pollination

**B. Answer the following. (Any Five)**

**(05)**

1. Enlist types of DNA
2. Brief about the golden rice
3. Enlist the cryo-protectant
4. Draw the labelled diagram of double helix DNA model.
5. Stages of micropropagation
6. Enlist methods are employed for slow growth cultures
7. Enlist the major constituents in plant tissue culture.

**Q.3 Write short notes. (Any five)**

**(15)**

1. Double fertilization process
2. List out the steps involved in cryopreservation.
3. Enlist the pollinator
4. Applications of anther culture
5. Significance and uses of haploids
6. Applications of embryo culture

**Q.4 Attempt any Three/Long Questions/Example**

**(15)**

1. Write difference between Plant cell and Animal cell
2. Write difference between Prokaryotic cell and Eukaryotic cell.
3. Write difference between Z-DNA and B-DNA.
4. How to make transgenic plants explain in shortly with the figure.