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AAN-468 Seat No. _____

B. Sc. (Sem. V) Examination

October / November - 2016

CC-I-9 : Biotechnology (Principles of Biotechnology Applied to Plants)

Time : **3** Hours] [Total Marks : **70**

1 Answer the MCQ and Short questions : **15**

(1) Who contributed to develop artificial media.
- (a) Gautheret
- (b) White
- (c) Nobecourt
- (d) all of these

(2) In vitro callusing can occur due to
- (a) low Auxin and low cytokinin
- (b) low Auxin and high cytokinin
- (c) high Auxin and high cytokinin
- (d) high Auxin and low cytokinin

(3) Glyphosate has some structural similarities with
- (a) Shikimate 3-Po4
- (b) PEP
- (c) both (a) and (b)
- (d) none of these

(4) nos region of T DNA is responsible for
- (a) acetosyringone
- (b) α-hydroxyaceto syringone
- (c) flavanoids
- (d) none of above

(5) High level of auxin cause
   (a) Bud initiation
   (b) Rooting
   (c) Shooting
   (d) Callus growth

(6) _____ is selectable marker gene.
   (a) npt II
   (b) Luciferase
   (c) Glucurinadase
   (d) all of above

(7) Methanol is sterilized by
   (a) Filteration
   (b) Autoclaving
   (c) U.V. radiaton
   (d) Hot air oven

(8) MS media is _____ media.
   (a) defined
   (b) biological
   (c) natural
   (d) All of above

(9) Protoplast fusion can be mediated by
   (a) High Ca+ and pH
   (b) PEG
   (c) Electrical impulse
   (d) All of above

(10) Who is the father of plant tissue culture
   (a) Guha
   (b) Haberlandt
   (c) maheshwari
   (d) hanning

(11) What is explant?

(12) List out secondary metabolite produced by plants.

(13) Define plant tissue culture.

(14) Define totipotency.

(15) Give the full form of PEDC.

2 Answer the following briefly : (Any **five**) **25**

(1) Sterilization techniques of plant tissue culture.

(2) Laboratory design for tissue culture

(3) Pollen culture and uses of haploids.

(4) Preservation of germplasm

(5) Ti plasmid and gene transfer.

(6) Isolation and selection of explants.

(7) Cell growth and organogenesis

3 Answer the following in detail : (any **three**) **30**

(1) Transgenic plants.

(2) Plant tissue culture media.

(3) Direct gene transfer techniques.

(4) Secondary metabolite production.

(5) Artificial seed
