

## **Sample questions- MCQ (AEA)**

1. Hormone pair required for a callus differentiation are
  - (a) Auxin and Cytokinin
  - (b) Auxin and Ethylene
  - (c) Auxin and Absiccic acid
  - (d) Cytokinin and Giberrllin
2. Bacteria protect themselves from viruses by fragmenting viral DNA with
  - (a) Ligase
  - (b) Endonuclease
  - (c) Exonuclease
  - (d) Gyrase
3. ELISA is for
  - (a) Using radiolabelled second antibody
  - (b) Usage of RBCs
  - (c) Using complement-mediated cell lysis
  - (d) Addition of substrate that is converted into a coloured end product
4. RNA interference helps in
  - (a) Cell proliferation
  - (b) Micropropagation
  - (c) Cell defence
  - (d) Cell differentiation
5. The first clinical application of gene therapy over a 4 year old girl was for
  - (a) Adenosine deaminase deficiency
  - (b) Adenosine deficiency
  - (c) Growth deficiency
  - (d) Adenine deficiency
6. The crossing of F1 to any of the parent is known as
  - (a) Test cross
  - (b) Back cross
  - (c) F1 cross
  - (d) All of the above
7. HPLC is used for –
  - (a) To detect functional group of the compound
  - (b) To detect molecular weight of the compound
  - (c) To separate, identify and quantify each component in a mixture
  - (d) To detect the number of hydrogen and carbon atoms in a compound.
8. Glucose is a –
  - (a) Ribosugar
  - (b) Aldosugar
  - (c) Ketosugar
  - (d) None of these

9. LER is an index to assess
- (a) Light intensity
  - (b) Intercropping advantage
  - (c) Crop rotation advantage
  - (d) Leaf area.
10. Cumulative size distribution value for an aerosol size bin is defined as the concentration of particles that are
- (a) higher than the size range
  - (b) smaller than the size range
  - (c) higher than or equal to the size range
  - (d) smaller than or equal to the size range
11. The microorganisms responsible for the conversion of ammonium ion to nitrite nitrogen in soil is –
- (a) Rhizobium
  - (b) Nitrobacter
  - (c) Nitrosomonas
  - (d) Algae
12. Which of the following is mainly responsible for eutrophication?
- (a) Phosphate
  - (b) Nitrate
  - (c) Carbonate
  - (d) Sulphate
13. The most abundant greenhouse gas in earth's atmosphere is –
- (a) Propane
  - (b) Methane
  - (c) Carbon dioxide
  - (d) Nitrous oxides
14. Which molecule confers toxicity to gram negative bacteria
- a. Teichoic acid
  - b. Lipoteichoic acid
  - c. Lipid A
  - d. None of the above
15. Which of the following carbon isotope is unstable?
- (a)  $^{12}\text{C}$
  - (b)  $^{13}\text{C}$
  - (c)  $^{14}\text{C}$
  - (d) None of the above
16. Assume the number of misprints per page in observing 100 pages is distributed as Poisson. If the number of pages with no misprint is 10, then a good estimate of the average number of misprints in a page of the book is
- (a) 0.1
  - (b) 1.0
  - (c) 2.3
  - (d) 5.0

17. For comparing the means of two normal populations based on two samples of sizes 5 and 6, when the variances are not same, one should use
- (a) t-test
  - (b) F-test
  - (c) Chi-squares test
  - (d) none of the above tests
18. Based on the data on blood sugar level and BMI, the regression equation of MBI on blood sugar was found to be:
- $$Y = 0.2X - 2$$
- If the correlation co-efficient between  $X$  and  $Y$  is 0.2, then
- (a) the means of  $X$  and  $Y$  are equal, and the variances of  $X$  and  $Y$  are equal
  - (b) the means of  $X$  and  $Y$  need not be equal, but the variances of  $X$  and  $Y$  are equal
  - (c) the means of  $X$  and  $Y$  are equal, but the variances of  $X$  and  $Y$  need not be equal
  - (d) neither the means of  $X$  and  $Y$  need to be equal, nor the variances of  $X$  and  $Y$  need to be equal.