

## NOTE

There will be 50 questions. The following are the model questions.

### Model Questions for Entrance Examination of Ph.D. (Nano Science & Technology) 2012-13

1. Enzymes that catalyze the joining of two or more molecules coupled with the breakdown of ATP of some other nucleotide belong to the enzyme class

- a) Transferases
- b) Lyases
- c) Isomerases
- d) Ligases

2. The general qualitative test for the detection of carbohydrates is

- a) Ninhydrin test
- b) Molisch test
- c) Hopkin-Cole test
- d) Biuret test

3. The process of formation of cDNA from mRNA is called

- a) Translation
- b) Transcription
- c) Reverse transcription
- d) Splicing

4. Identify the trace element whose deficiency causes goiter

- a) Copper
- b) Iron
- c) Molybdenum
- d) Iodine

5. The flow of electrons through complex III of the mitochondrial electron transport chain can be blocked by

- a) Antimycin A
- b) Amytal
- c) Rotenone
- d) Carbon Monoxide

6. Pick out the INCORRECT statement about the competitive inhibitor of an enzyme

- a) It increases the  $K_m$  of the enzyme
- b) It decreases the  $V_{max}$  of the enzyme
- c) Its structure is similar to that of the substrate
- d) This inhibition can be overcome by increasing the substrate concentration

7. Which of the following is a polyunsaturated fatty acid?

- a) Oleic acid
- b) Linolenic acid

- c) Palmitic acid
- d) Stearic acid

8. Which of the following is a prokaryote?

- a) Saccharomyces
- b) Rhizopus
- c) Bacillus
- d) Chlorella

9. Jumping genes are also called

- a) Conjugates
- b) Transducible elements
- c) Transposons
- d) Plasmids

10. Fluorescent microscope uses a

- a) Mercury vapour arc lamp
- b) Halogen lamp
- c) Infrared lamp
- d) Ultra violet lamp

11. Fusion reaction takes place at high temperature because

- a) atoms are ionized at high temperature
- b) Molecules break up at high temperature
- c) Nuclei break up at high temperature
- d) Kinetic energy is high enough to overcome repulsion between nuclei

12. If in a transformer, the number of turns of primary coil and the secondary coil are 5 and 4 respectively and if 240 V is applied on the primary coil then the ratio of the current in the primary and secondary coil is

- a) 4:5
- b) 5:4
- c) 5:10
- d) 8:12

13. The hardest material found in nature is

- a) Steel
- b) Topaz
- c) Quartz
- d) Diamond

14. Which of the following can directly read printed characters and transfer them to computer

- a) Printer
- b) OCR
- c) Keyboard
- d) Video Screen