

**2016**

Full Marks : 40

Time : 2 hours

*All Question carry equal marks.  
Answer any **four** questions from any  
one group as per your specialization.*

**Group - A**  
**( Metabolism )**

1. (a) Give an account of different enzymes participating in fatty acid synthesis.  
(b) Describe the process of sulphur uptake.
2. (a) Describe why it is essential to study the metabolism of sulphur.  
(b) Explain the lipid catabolism process.
3. (a) What do you understand by assimilation of nitrogen ? Explain.  
(b) Give an account of nitrogen fixing bacteria.
4. (a) Explain nitrogen cycle. Give a schematic diagram.  
(b) What are the enzymes that participate in the fixation of nitrogen ? Describe its structural and functional properties.
5. (a) Give a comparative account between aerobic and non-aerobic respiration.  
(b) Differentiate between alpha- and beta-oxidation.

***(Turn over)***

(2)

6. (a) Give the energetic of TCA cycle. Why it is regarded as the centre of all pathways ?
- (b) Describe HMP pathway.

**Group - B**  
**( Ethology and Developmental Biology )**

1. (a) Describe the basic mechanism of learning and memory in human.
  - (b) Discuss the orientation, navigation and migration behavior in birds.
  2. (a) Discuss the migration behavior in fishes with suitable examples.
  - (b) Illustrate the reproductive behavior in Vertebrates.
  3. (a) Define cleavage ? Discuss the types cleavage and the role of Yolk on cleavage.
  - (b) Discuss the physiological and biochemical changes during cleavage.
  4. (a) Explain the Nerphogenic movements and mechanism of gastrolation.
  - (b) Describe the biochemical and molecular events take place during fertilization.
  5. (a) What are extra-embryonic membranes ? Describe their development, functions and fate.
  - (b) Summaries the regeneration capacity of various groups of animals.
  6. (a) Differentiate between Oestrous and menstrual cycle.
  - (b) Describe various physically used contraceptive devices. Add a note on necessity of birth control.
-