

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: BE
BRANCH: ALL

SUBJECT: BT3021 BIOLOGICAL SCIENCES

SEMESTER : III
SESSION : MO/15

TIME: 03:00 hrs.

FULL MARKS: 60

INSTRUCTIONS:

1. The question paper contains 7 questions each of 12 marks and total 84 marks.
2. Candidates may attempt any 5 questions maximum of 60 marks.
3. The missing data, if any, may be assumed suitably.
4. Before attempting the question paper, be sure that you have got the correct question paper.
5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.

- Q.1(a) Brief about the origin of life. [2]
Q.1(b) Describe the different levels of biological organization. [4]
Q.1(c) Elucidate the Miller's experiment as well as its significance. [6]
- Q.2(a) What do you understand about hydrogen bond? [2]
Q.2(b) Describe the structural composition of proteins. [4]
Q.2(c) Discuss about composition and importance of carbohydrates. [6]
- Q.3(a) What do you understand about anaerobic respiration? [2]
Q.3(b) Write the various steps taking place in glycolysis. [4]
Q.3(c) Discuss the reactions and importance of citric acid cycle in carbohydrate metabolism. [6]
- Q.4(a) What do you mean about viruses? [2]
Q.4(b) Discuss about the cellular structure of microorganism. [4]
Q.4(c) Write the salient features of intracellular organelles of eukaryotes. [6]
- Q.5(a) Define the central dogma of molecular biology. [2]
Q.5(b) Discuss about the transcription process. [4]
Q.5(c) Describe the translation process as well as its importance. [6]
- Q.6(a) What do you understand about activation energy of enzyme? [2]
Q.6(b) Discuss about lock and key model and induced fit model. [4]
Q.6(c) What do you mean about reversible and irreversible inhibitors? [6]
- Q.7(a) What do you mean about centrifugation? [2]
Q.7(b) Discuss the application of chromatography in biological science. [4]
Q.7(c) Describe the use of polyacrylamide gel electrophoresis and agarose gel electrophoresis. [6]

*****04.12.2015 E*****