2015
BIOCHEMISTRY
Paper – BCO405
(Biochemical Toxicology)
Full Marks – 25

The figures in the margin indicate full marks

Candidates are required to give their answers in their own words as far as practicable

1. Answer any two questions:

   (a) Cr (+6) causes greater DNA damage in the presence of ascorbate in NER-deficient cell lines. — Explain.

   (b) Arsenic causes changes in DNA methylation. How is this related to the toxicity of arsenic?

   (c) Describe a bio-sensor that detects alkane(s). How sensitive is the sensor?

   (d) Discuss the changes in gene expression when Daphnia are exposed to either Ag or AgNP.

2. (a) Induction of CYP450 often mandates change in the dosage of a drug. Justify the statement mentioning the name of a specific drug.

   (b) Conjugation reaction is necessary for the excretion of certain xenobiotics. Explain with an example.

   or

3. (a) Design an experiment to assay antioxidant potency of one plant product.

   (b) Compare the efficacy of tea polyphenol and nanoconjugate of the same polyphenol component as antioxidant by “reduction assay”.

   4. There are 4 tonic plant root extracts that are very similar but not identical in terms of their protein content. Design an experiment by which one specific/signatory protein of one variety could be identified/purified.

   or

5. A toxic xenobiotic oligomerizes monomeric proteins. How could this be demonstrated in vitro?