1/H–77 (i) (Syllabus–2015)

2 0 1 6

(October)

BIOTECHNOLOGY

(Honours)

Paper—I (T)

(Cell Biology and Genetics)

Marks : 56

Time : 3 hours

The figures in the margin indicate full marks
for the questions

Answer Question No. **1** which is compulsory and
any **four** from the rest

1. Describe, with the help of neatly labelled
   diagrams, the structures of any *two* of the
   following :   6×2=12

   (a) Plasma membrane

   (b) Endoplasmic reticulum

   (c) Golgi complex

(*Turn Over*)

2. What are polytene chromosomes? How are they useful to the organism in which they occur? 4+7=11

3. Use an example to describe the genic-balance theory of sex-determination. 11

4. What are cell cycle checkpoints? What is the significance of cell cycle checkpoints in multicellular organisms? 6+5=11

5. How does multiple allelism give rise to ABO blood groups in man? 11

6. What causes numerical alterations of chromosomes? Give the labelled diagrams to support your answer. 11

7. What are auxotrophic bacterial mutants? How can you isolate them? 3+8=11

8. Write short notes on the following : 4+4+3=11

   (a) Prophase I of meiosis

   (b) Complementary genes

   (c) Kappa particles in paramecium

★ ★ ★