

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION MAY 2023
(Sixth Semester)

Branch – BIOTECHNOLOGY
ANIMAL BIOTECHNOLOGY

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (10 x 1 = 10)

- 1 Introduction of DNA into cells by exposing to high voltage electric pulse is
(i) electrofusion (ii) electrofission
(iii) electrolysis (iv) electroporation
- 2 Which of the following species oocytes and embryos are highly susceptible to cryodamage
(i) Sheep (ii) Buffalo
(iii) Swine (iv) Monkey
- 3 The most common sugar source for animal cell line is
(i) Sucrose (ii) Maltose
(iii) Lactose (iv) Arabinose
- 4 Which of the following is the oldest cell line?
(i) Vero cell line (ii) HeLa cell line
(iii) CHO cell line (iv) BHK cell line
- 5 Cell Culture freshly prepared from isolated tissue is known as
(i) Organ culture (ii) Primary culture
(iii) Cell line (iv) Histotypic culture
- 6 The metabolic products of glucose and glutamine are
(i) CO₂ and NH₃ (ii) CO₂ and lactate
(iii) Lactate and ammonium (iv) Lactate only
- 7 In hybridoma technology, hybrid cells are selected in
(i) MS medium (ii) x-gal medium
(iii) HAT medium (iv) white medium
- 8 The injection of DNA into developing inflorescence using a hypodermic syringe is called
(i) macroinjection (ii) micromanipulator mediated DNA delivery
(iii) microfection (iv) microinjection
- 9 Transgenic goats have been used to produce which of the following protein that is used for dissolving blood clots?
(i) Amyloid precursor protein
(ii) α1-anti trypsin (AAT)
(iii) Casein
(iv) A variant of human tissue-type plasminogen activator
- 10 First genetically engineered product licensed for human use was
(i) Somatotropin (ii) B-endorphins
(iii) Thyrotropin (iv) Humulin

Cont...

SECTION - B (25 Marks)

Answer ALL questions
 ALL questions carry EQUAL Marks (5 x 5 = 25)

- 11 a Criticize the mechanism of regulation of Oogenesis in Xenopus.
 OR
 b Recall the method of collection and preservation of embryos.
- 12 a Summarize the types of animal cell culture.
 OR
 b List the essential equipments required for animal cell culture.
- 13 a Examine the role of feeder layer in cell culture.
 OR
 b Infer about the biology of cultured cells.
- 14 a Explain about the transfection process by Electroporation.
 OR
 b List the chemical methods of transfection.
- 15 a Recall the events that occur in somatic cell genetics.
 OR
 b Summarize the ethical issues in animal biotechnology.

SECTION -C (40 Marks)

Answer ALL questions
 ALL questions carry EQUAL Marks (5 x 8 = 40)

- 16 a Explain in detail about the spermatogenesis process.
 OR
 b Examine the steps in invitro Fertilization.
- 17 a Criticize the role of chemical constituents of culture media.
 OR
 b List the applications of serum free media.
- 18 a Describe the key events occur in apoptosis process.
 OR
 b List the methods used for cell counting.
- 19 a Examine the role of gene targeting in animal cell culture.
 OR
 b List the applications of gene knock out technology.
- 20 a Explain the various types of Vaccines.
 OR
 b Explain in detail about the production of Dolly.

Z-Z-Z

END