Biyani Girls College

Model test paper A

M.Sc Biotech Final

Animal Cell Science Technology and IPR

Time allowed: 3hrs **Max Marks=100**

Q1 is compulsory. Attempt any 5 in all.

Q1. (i) _____ & _____ are two buffers used in animal culture media.

- Name two characteristic properties of transformed cells.
- Define patent.
- Name two instruments used for cell counting.
- Why should cells not be left with trypsin for too long?
- Full form of Apaf-1.
- _____ & _____ methods are widely used for transfection.
- Expand MCTS.
- Name two selectable markers.
- _____ is a serum free media.
- _____ & _____ are example of transgenic sheeps
- Gene therapy can be used for _____
- State one difference between organ and histotypic cultures.
- Name two proteins produced using animal as bioreactors.
- Define FISH.
- _____ dye is used in Dye exclusion assay.
- Give two techniques used for characterization of cultured cells.
- G-banding utilizes _____ dye and Q-banding uses _____ dye.
- _____ stem cells are used in bone marrow transplant.

- _____ was first transgenic animal produced.

Q2. Give a detailed account of animal culture medium.
20

Q3. Write short note on:
(10+10=20)

- Role of serum and supplements
- BSS

Q4. Explain in detail scaling up of animal cell culture.
20

Q5. Describe in short: (any2)
(10+10=20)

- Apoptosis
- Cell Separation
- ES cell therapy

Q6. Write short notes on:
(10+10=20)

- Methods of transfection
- Cell culture based vaccines

Q7. Write an essay on transgenic animals
20

Q8. Write in short: (any2)
(10+10=20)

- IPR
- Mapping and cloning of human disease genes
- 3D culture and tissue engineering

Q9. State the reason for choosing mice as experimental organism for gene introduction and highlight its application in gene therapy
20

Biyani Girls College

Model test paper B

M.Sc Biotech Final

Animal Cell Science Technology and IPR

Time allowed: 3hrs **Max Marks=100**

Q1 is compulsory. Attempt any 5 in all.

Q1. (a) Fill in the blanks:

(i) _____ buffer is used with CO_2 requiring cultures.

(ii) MTT stands for _____.

(iii)Commonly used enzymes for tissue disaggregation are _____ & _____.

(iv)3-D culture can be done using _____ & _____.

(v) ____ released from mitochondria helping in assembly of the apoptosome.

(vi) _____ is the commonly used mammalian retrovirus.

(vii) ____ is used for arresting cells in metaphase.

(viii) _____ is a human fibroblast cell line.

(ix) PBSA stands for _____.

(x) _____ & _____ were the earliest culture media.

(b) Define:

(i) Patent rights (ii)knock-out mice (iii) cell cytotoxicity (iv) Genetic counselling (v) Cell transformation

(vi) cell synchronization (vii) transgenic fish (viii) FISH (ix) antisense RNA technology (x) FACS

Q2. Give a detailed account of PCD and its pathways.
20

Q3. Differentiate between:
(5x4=20)

- Primary and established cell lines
- Morphology of cells *in-vitro* & *in-vivo*
- Intrinsic and extrinsic pathway
- Organ and cell culture

Q4. Explain in detail the measurement of cell viablity and cytoxicity
20

Q5. Describe in short:
(10+10=20)

- DNA based diagnosis of Genetic diseases
- Equipments and materials used in animal cell culture lab

Q6. Write short notes on:
(10+10=20)

- Mice as experimental model
- Organ and histotypic culture

Q7. Write an essay on various methods of transfection in mammalian cell lines
20

Q8. Write in short: (any2)
(10+10=20)

- FISH

- RFLP
- Positional cloning

Q9. Write an essay on Intellectual Property Rights **20**