

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI-600 086
(For candidates admitted during the academic year 2008-09 & thereafter)

SUBJECT CODE: BY/PC/AB25

M. Sc. DEGREE EXAMINATION, APRIL 2009
BIOTECHNOLOGY
SECOND SEMESTER

COURSE : MAJOR CORE
PAPER : ANIMAL BIOTECHNOLOGY
TIME : 3 HOURS

MAX. MARKS: 100

SECTION – A

ANSWER ALL THE QUESTIONS

(20 x 1 = 20)

Define / Explain the following:

1. Differentiate cell culture and cell line.
2. Define Hayflick's limit.
3. Differentiate maintenance medium and growth medium.
4. Give examples of adherent and non-adherent blood cells.
5. What are A grade Oocytes.
6. Write about Principles of informed consent.
7. Differentiate selectable marker and scorable marker.
8. Give examples of fibroblast and epithelial derived cell lines.
9. Explain the role of PMSG.
10. Write the significance of Wharton's jelly.
11. What is a plasma clot?
12. Write about Histotypic organ culture.
13. Define cryopreservation.
14. Name the cell lines used for the production of therapeutic products.
15. Explain why 7.5% NaHCO_3 $\frac{w}{v}$ is used in media.
16. Define split Ratio.
17. Nucle mouse.
18. Epstein Barr Virus.
19. Roller bottles.
20. Transfection.

SECTION – B**ANSWER ANY FOUR QUESTIONS IN ABOUT 600 WORDS (4x 10 = 40)**

21. What are the processes involved in the production of a cell line from mouse Thymus or spleen? Explain with suitable diagrams.
22. What is BSS? Write the composition of the various BSS solutions.
23. Explain the methodology used for the viral transformation of animal cells.
24. Write about the techniques used by Dr Ian Wilmut for cloning Dolly?
25. Brief about Germ cell storage and its applications.
26. Elaborate upon the ethical issues involved in human cloning and embryonic stem cells. Write briefly about the recent lift of ban on hES.

SECTION – C**ANSWER ANY TWO QUESTIONS IN ABOUT 1500 WORDS (2x 20 = 40)**

27. What are test tube babies? How are they produced using Assisted Reproductive technology?
28.
 - a) What are the various sources of stem cells & how would you separate stem cells from other committed cells using marker?
 - b) Write about the in vitro amplification & the diseases that can be cured using stem cells.
29.
 - a) Compare the conventional vaccine production from recombinant vaccine and list the cell lines used for recombinant vaccine production.
 - b) How is the virulence reduced by Passaging in cell lines and discuss the efficiency and safety of recombinant vaccines.
30.
 - a) Explain the production of orthoclone OKT₃ and write about HAT selection.
 - b) How are the hybridoma cells isolated and discuss the applications of hybridoma produced MAb.
