

ZOOLOGY
COURSE/PAPER: ZOOG-4
Animal Cell Biotechnology
(THEORY)

Full Marks 30

Time -1½ hrs

INSTRUCTIONS TO THE CANDIDATES

1. Candidate have to write Roll Number, Registration Number, subject, paper code and other details but **have not write the name in any part of the answer script.**
2. Students have to send a **CONFIRMATION MESSAGE** either in group What's App immediately after receiving the question paper.
3. A4 page size with proper margin with continuous page number is to be followed.
4. The **FRONT PAGE** of the University Answer Scripts to be used for basic information related to the examinations.
5. No candidates will distribute or forward the question paper(s) by any means of communication, once posted in the Whats App group by the respective teacher(s).
6. The student should upload/post the answer script to the concerned teacher's within half an hour after the allotted time for examination has elapsed.
7. After writing, the students have to prepare a single PDF file of the answer script and save it in the name of **(Subject)_ (Paper Code)_ (Roll Number)_ (Date of Examination)**. Students have to **POST** the answer script primarily by e-mail as given during notification.
8. If any case e-mail is not working then only What's App can be used to send the answer copy. If What's App is opted, the answer copy to be send **INDIVIDUALLY** to the concerned faculty members (not in the **GROUP** What's App).
9. After posting the **ANSWER** script in **SINGLE PDF** format, students had to restore the hard copy of the **ANSWER SCRIPT** and **DIGITAL DOCUMENTS VERY CAREFULLY** without disclosing to anyone. If required the same will be asked.

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1. Answer **any five** **1x 5 = 5**
- a. What is the function of TEMED and ammonium sulphate in PAGE?
 - b. Why is PCR machine called a "Thermal cyclor"?
 - c. Why is comb used during gel casting?
 - d. What do we do to covert DNA to single strand during southern blotting?
 - e. Expand the BAK and YAK?
 - f. What is cDNA ?

2. Answer any five

3 x 5 = 15

- a. Differentiate Northern, Southern and Western blotting
- b. Write a short note on the basic mechanism of DNA microarray
- c. How can you produce humulin using recombinant DNA technology?
- d. What is DNA fingerprinting? State two applications.
- e. Differentiate between attenuated and inactive vaccine?
- f. What is plasmid vector ? Draw a schematic diagram of pBR322 vector?

3. Answer any one

1x 10= 10

- a. Briefly describe the process southern blotting with diagram.
- b. What is gene cloning? Mention the steps involved in gene cloning with suitable diagram? Write any two application of recombinant DNA technology?