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Register Number:

DATE:

**ST. JOSEPH’S COLLEGE (AUTONOMOUS), BANGALORE-27**

**ZOOLOGY – IV SEMESTER (CBCS)**

**SEMESTER EXAMINATION: APRIL 2022**

**(Examination conducted in July 2022)**

ZO 6118: Histology, Genetics and Biotechnology

Time- 2 1/2hrs Max Marks-70

**This paper contains 2 printed pages and three parts**

**Draw diagrams wherever necessary**

**PART A**

**I. Answer the following questions. Each question carries 1 mark. 7X1=7**

1. What is the genotypic ratio of a dihybrid testcross?

2. \_\_\_\_\_\_\_\_\_\_\_\_ is the keratinized papillae of the human tongue.

3. Testosterone is produced by \_\_\_\_\_\_\_\_\_\_\_ cells.

4. Enumerate BLAST.

5. \_\_\_\_\_\_\_\_\_\_ is secreted by delta cells of pancreas.

6. In the recombinant DNA technology \_\_\_\_\_\_\_\_\_\_\_\_ enzymes are used as molecular scissors.

7. The percentage of recombination frequencies in linked genes is \_\_\_\_\_\_\_\_\_\_\_.

**PART-B**

**II. Answer the following questions. Each question carries 2 marks 4X2=8**

8. Mention the types of base substitution mutation.

9. What are hormones secreted by adrenal cortex?

10. What is Freemartin?

11. *Drosophila melanogaster* having 2A+XXY karyotype develops into \_\_\_\_\_\_ flies.

**PART-C**

**III. Answer any five questions. Each question carries 5 marks 5X5 = 25**

# 12. If a man with type A blood marries a woman with type B blood and their child is blood

#  type O, what are the genotypes of the parents?

13.Draw a neat labelled diagram of gastric gland

14. Explain Darlington’s breakage and reunion theory of crossing over

15. List out any five enzymes used in recombinant DNA technology with their functions

16. With a neat labelled diagram, give the histological details of the spleen.

17. Substantiate the inheritance of skin colour in man.

18. State the law of independent assortment with suitable example

**PART-D**

**III. Answer any three questions. Each question carries 10 marks 3X10 = 30**

**19.** Describe a method for detecting sex-linked lethal mutation

**20.** On what basis, a histological section of ovary may be distinguished to be from a pre-

 pubertal female or a female in her reproductive age. Justify your answer.

**21.** Explain the regulation of lac operon in the presence of lactose

**22.** With a neat labelled diagram, give the histological details of the liver

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