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DATE:**13-04-2018**

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

B.Sc. ZOOLOGY – VI SEMESTER

SEMESTER EXAMINATION – APRIL 2018

**ZO 6112: Histology and Genetics**

**Time: 3hrs Maximum marks : 100**

(For supplementary candidates)

Do not write the register number on the question paper

Please attach the question paper along with the answer script.

*This question paper has two printed pages and three parts*.

1. **Answer the following 1 X 20 = 20**
2. Where do you find Von Ebner’s gland?

a. Thyroid b. intestine c. tongued.stomach

1. The parietal cells of the gastric glands secrete-
	1. HCl b. gastric enzymes c. Hormones d. mucous
2. The red pulp of spleen is mainly made up of -
	1. Collagen fibres b. elastic fibresc.reticularfibres d. none of the above
3. The hormone calcitonin is produced by
	1. Kidney b. parathyroid c. pituitary gland d. thyroid gland
4. Zonafasiculata is a region in the
5. Intestine b. Adrenal cortex c. Adrenal medullad. ovary
6. Juxtaglomerular complex is seen near the-
	1. Bowman’s capsule b. Loop of Henlec.collecting tubule d.in the urinary tract
7. Kupffer cells are found in-
	1. Lining of the proximal convoluted tubulesb.lining of the hepatic sinusoids
	2. Pancreatic acinid. portal area of the liver.
8. If a heterozygous walnut comb bird is crossed to a single comb one the phenotypic ratio will be-
	1. 9:3:3:1 b. 3:1 c.1:1 d. 1:1:1:1
9. The inheritance of skin colour is due to
10. Linked genes b. multiple alleles c. Polygenes d. epistatic genes
11. Erythroblastosisfoetalisis caused due to incompatability of
12. A & O blood types b. Rh factor c AB &O blood group d. O & B blood group
13. Klinefelter’s syndrome has the gentotype
14. 44 +XXY b. 44 +XYY c. 44+ XXX d. 44+XXO
15. In Drosophila the gene for Red/White eye colour is on the
	1. X chromosome b. Y chromosome c. Chromosome II d. chromosome III
16. In Muller’s experiment to detect mutation a ClB female was created. B stands for
	1. Black body colour b. brown eye colourc.Black eye colour d. Bar eye.
17. The enzyme used to cleave the DNA is
	1. DNA synthetaseb.DNA polymerase c. Endonucleases d. DNA ligases
18. When E coli is cultured in a medium containing lactose, addition of glucose causes-
	1. Catabolity repression b catabolite degradation c. catabolite expression d.none of the above.
19. The science of changing the environment and living conditions of humans to improve the human race is called
	1. Euthenics b. Euphenics c. aesthetics d. genetic engineering
20. The process called terminalization is seen in
	1. Diplotene b. Diakinesis c. Zygotene d. Metaphase I

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1. According to CV Bridge’s Genic balance theory the x/a ratiofor male and female are ------------- ------------- respectively
	1. 0.5 and 1.0 b. 1.0and 1.5 c. 0.33 and 1.5 d.0.66 and 1.5
2. Base analogs are similar to normal nitrogen bases auch as-
	1. 5 amino purine b. 5 bromo uracil c. 2 amino purine d. both b and c
3. .In the condition alkaptonuria , the urine turns black on exposure to air due to –

a. reduction of homogentisic acid b oxidation of homogentisic acid

c. reduction of tyrosine d. oxidation of tyrosine

1. **Answer any Eight of the following5 X8 = 40**
2. With a neat labeled diagram describe the histology of a thyroid follicle.
3. Describe the exocrine part of the pancreas and mention at least two important enzymes produced by it.
4. Describe the histology of a seminiferous tubule with a neat labeled diagram.
5. What are plasmids? Mention its role in Genetic engineering.
6. What is bioiniformatics? Explain any one of its application.
7. Explain any two types of spontaneous mutation with examples.
8. Define linkage. Differentiate between complete and incomplete linkage with suitable examples.
9. Note:- The gene for normal vision ‘C’ is sex linked. The recessive gene ‘c’ causes colourblindness.

What are the genotypes and phenotypes of the parent and offspring when a woman who is a carrier of colourblindness is married to a normal man?

1. Note : In poultry, the gene C for colour of feathers is hypostatic to I the inhibitor gene which is epistatic

Problem: what are the phenotypes of the offspring of the cross between

CcIi X CcIi

 30. Explain how Turner’s syndrome occurs. List four of its prominent features.

**III. Answer any Four of the following. 10 x 4 =40**

31. Describe the histological detail of the tongue.

32. Describe the histology of the Graafian follicle and corpus luteum.

33. Explain how Gynandromorphs occur. How does this support Genic balance theory of

Bridges ?

34. Give an account of how insulin is produced by using Recombinant DNA technology.

35. Explain the inheritance of skin colour in man.

36. What areinborn errors of metabolism? Explain the phenyl alanine pathway as an

example.

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