Pre-ISC Examination (2017-18)

BIOLOGY

PAPER – I **Time: 3hrs+15mts**

Std XII **F.M-70**

This paper comprises of TWO PARTS -Part I and Part II
Answer all questions
Part I contains twenty questions of one mark each
Part II consists of three sections A, B and C
*Section **A** has seven questions of two marks each, Section **B** has seven questions of three marks each, Section **C** has three questions of three marks each.*
Internal choice has been provided in two questions in Section A and two questions in Section B and all the three questions of Section C.

PART I (20 marks)

Q1 a) Answer the questions briefly and to the point. (8)

i) What is artificial insemination ?

ii) Define parthenogenesis.

iii) Name the Era and period of reptiles.

iv) Give the characteristic feature of cancer cells.

v) Name the beverages produced with and without distillation.

vi) Give any two examples of Biopiracy.

vii) What is cryopreservation?

viii) Give the ratio of polygenic inheritance.

b) Each of the following has four choices .Choose the best option in each case : (4)

(i) The genetic makeup of Klinefelter's syndrome –

1)44+XXY 2)44+XYY 3) 42+XYY 4) 44+XXO

(ii) Montreal protocol aoms at-

1)Biodiversity conservation 2)Reduction of Ozone depleting substance

3) Control of water pollution 4) control of CO_2 emission

(iii)A particular species of plant produces light,non sticky pollen in large numbers and its stigma is long and feathery.These modifications facilitate pollination by

1)Wind 2) Insects 3) Water 4)Animals

(iv) Name the bacterium responsible for the large holes in swiss cheese-

1) Lactobacillus 2) Streptococcus 3) Propionibacterium 4) staphylococcus

c) Give one significant contribution of each of the following scientists : (4)

i)R.Mishra

ii)Alec Jeffery

iii) T.H Morgan

iv)P Maheshwari

d) Define : i) Clone ii) Population (2)

e) Give reasons: (2)

i)Cellulase is used to isolate genetic material in plant cells but not for animal cells.

ii)Mother's first milk is required for immunity.

PART II

SECTION A (14 Marks)

Answer **all** questions

Q2.a)Differentiate between the following : i) Unambiguous and universal genetic code

ii) Homologous and Analogous organ OR

b) Discuss sex determination in Honey bee.

Q3.Mention two advantages of lactational amenorrhoea as a contraceptive method.

Q4.Write a brief note on types of antibodies.

Q5.How did plant breeding technique help the North Indian farmers to develop cane with desired characters.

Q6 .An electrostatic precipitator in a thermal power plant is not able to generate high voltage of several thousands.write the ecological implications because of it.

Q7. a)Explain the naming of a restriction endonuclease EcoRI. **OR**

b)Mention i) any two environmental laws ii) Contribution of Ahmed khan of Bangalore

Q8.write a note on i) Eutrophication ii) Biofortification

SECTION-B (21 Marks)

Answer **all** questions

Q9.a) Expand and explain the following : i) RCH ii) IVF iii) GIFT **OR**

b)Explain the follicular phase in human female .

Q10.Both Haemophilia and Thalasssemia are blood related disorders in humans.Write their causes and difference between the two.Name the category of genetic disorder they both come under.

Q11.Discuss Industrial melanism from natural selection point of view.

Q12.Describe the replication of a retrovirus in the infected human cell with the help of a diagram.

Q13.Draw the figure of pBR322 and label the following : 1. i)Origin of Replication

ii) Ampicillin resistance site iii) Tetracycline resistance site. 2. Mention the significance of Origin of site.

Q14. a)Draw a schematic diagram of carbon cycle **OR**

b) Describe the formation of a dicot embryo.

Q15.a) Explain the various steps in the production of artificial Insulin.

SECTION –C (15 Marks)

Answer **all** questions

Q16.a) Describe the physicochemical process of fertilization in human female. **OR**

b) Discuss the factors affecting Hardy Weinberg equilibrium.

Q17 a)Give the composition of biogas and discuss the steps involved in the production of

Biogas **OR**

b)Taking an example of a small pond,explain how the four componenets of an ecosystem function as a unit. Name the type of food chain that exists in a pond.

Q18. a) i)Describe the structure and function of tRNA molecule. Why it is reffered to as adapter molecule? ii)Explain briefly the splicing of hn RNA in eukaryotic cell. **OR**

b) i)Discuss Avery,Mcleod and McCarty's experiment.

ii) Compare giving reasons,the J shaped and S shaped models of population growth of a species.