II PU MODEL QUESTION PAPER – 3- 2023-2024 BRIKS ACADEMY PADMANABHANAGARA
SUBJECT – BIOLOGY (36)

Duration: 3hr 15 **Min Max. Marks: 70**

- **General Instructions:**
- **This Question paper consists of four parts A, B, C, D.**
- **Part – A consists of I and II and Part D consists of two parts, section –V and – VI**
- **All the parts are compulsory**
- **Draw diagrams wherever necessary. Unlabeled diagrams do not carry any marks**

PART – A

I. Select the correct alternative from the choices given below. 1 x 15 = 15

1. Haploid condition is not observed in which of the following cells
   a) Synergids and egg b) Zygote and PEN c) Antipodals and Egg d) Antipodal and Synergids
2. Pollen viability for rice and wheat plant is
   a) 30hrs b) few months c) 30 mins d) 30 seconds
3. During gestation the foetous develops limbs and digits by the end of
   a) First month b) Second month c) Third month d)Fifth month
4. The secondary oocyte after ovulation is covered by a non-cellular layer of
   a)Cumulous oophorous b)Corona radiata c) Zona pellucida d) Cortical layer
5. An example of hormone releasing IUD among the following
   a) Cu-7 b) Lippes loop c)LNG-20 d) Multiload 375
6. Which of the following is a foetal sex determination test?
   a)ZIFT b) GIFT c) MTP d) Amniocentesis
7. Which of the following Mendelian gene disorder is the representation of allosomal recessive trait?
   a)Haemophilia b) Thalassemia c) Sickle cell anemia d)Myotonic dystrophy
8. The process of removal of introns and joining of exons in a defined order in a primary transcripts occurs in
   a) Prokaryotes b)Eukaryotes c)Prokaryotes and Eukaryotes d) Prokaryotes and protista
9. A type of natural selection in which more individuals acquire mean character value is called
   a)Stabilising selection b) Disruptive selection
   c) Directional selection d) Dominant selection
10. Drug called Heroin is synthesizes by
    a) Methylation of Morphine b)Demethylation of Morphine
    c) Acetylation of Morphine d) Diacetylation of Morphine
11. The fungus not used in the production of any industrial product is
    a) Penicillium b) Aspergillus
    c)Trichoderma polysporum d) Glomus
12. Significance of Insertional inactivation method in Recombinant DNA technology is to
    a) Introduce the recombinants b) Isolate gene of interst
    c)Selection of recombinants d) Select the gene of interst
13. Which of the following organisms are studied by Cornell's in his elegant field experiments to study competition
    a) Warbler species b) Chathamalus and Balanus
    c) Cucko and Crow d) Cattle erget and grazing cattle
14. Decomposition rate of detritus will be slow if
    a) It is rich in nitrogen b) It is rich in lignin and chitin
    c) It is rich in water soluble substance d) it is rich in oxygen content
15. Western ghats have a greater diversity of
    a)Amphibians b)Reptiles c)Aves d)Mammals

II. Choose the correct and fill in the blanks 1 x 5 = 5

(Commensalism,Alveoli,Ammensalism,Panspermia,Codominance,Perisperm)

16. The residual persistent nucellus is called _____
17. The cells of -----secrete milk in the mammary glands.
18. AB blood group inheritance is an example for _____

19. _____is the theory that propose that units of life called spores were transferred to different planets including earth
20. A population interaction in which one species is called harmed and the other species is unaffected is _____

PART – B

III. Answer any FIVE of the following **2 X 5 = 10**

21. List any four complications a person suffers from untreated sexually transmitted infections .
22. Explain ICSI and IUI.
23. Give an example each for autosomal recessive disorder and autosomal dominant disorder.
24. Differentiate between Hugo de vries Mutation theory and natural selection theory of Darwin..
25. List any two differences between active and passive immunity.
26. What are primary lymphoid organs? Give two examples.
27. Baculoviruses are excellent biocontrol agents in Integrated Pest Management.Comment.
28. Ecological pyramids have limitations.Justify the statement with two reasons.

PART – C

IV. Answer any FIVE of the following. **3 X 5 = 15**

29. Explain any three out breeding devices.
30. Explain the changes that occur in ovary and uterus during luteal phase of menstrual cycle.
31. Explain the sex determination mechanism in honeybees.
32. With a neat labelled diagram explain nucleosome model.
33. Define placenta.Mention hormones secreted by placenta during pregnency.
34. Explain with an illustration how human insulin is synthesized through genetic engineering.
35. Describe the components of an aquatic ecosystem taking pond as an example.
36. Briefly explain the three levels of biodiversity.

PART –D
SECTION-I

V. Answer any four of the following. **5 X 4 = 20**

37. Draw a neat labeled diagram of human male reproductive system.
38. Mention the chromosomal disorders that are due to trisomy,represent their karyotype and two symptoms each.
39. Explain replication of retrovirus with the help of schematic representation.
40. Explain any five salient features of Genetic code.
41. Explain the process of sewage treatment.
42. Explain one gene inheritance with a schematic representation.
43. a) Explain the process of Polymerase chain reaction in amplification of desired DNA.
    b)Draw a neat labeled diagram of pBR322 vector.
44. What is mutualism? Explain with four examples.

SECTION-II

Answer any One of the following. **5 x 1 = 5**

45. Explain the stages of development of female gametophyte in angiosperms with diagrammatic representation.
46. Describe Watson and crick helical model of DNA with a neat labeled diagram.
47. a) What is endemism?
    b) Explain in-situ conservation as a strategy for conservation of biodiversity with suitable examples.
    c) What is bioprospecting?

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