

SWAMY VIVEKANANDA RURAL PRE-UNIVERSITY COLLEGE

Chandapura, Anekal Tq., Bengaluru-99

II PUC SECOND TEST, JULY - 2019

Time: 60 Mins

SUB: BIOLOGY

Max. Marks: 25

I Answer the following questions in a word or in a sentence each.

1. What is meant by monosporic development of female gametophyte?
2. How is bagging useful in a plant breeding programme?
3. Why does hnRNA need to undergo change?
4. Why is DNA replication said to be semi conservative?
5. What is the role of VNTR in DNA fingerprinting?

Name the enzyme which involve in transcription.

II Answer any five of the following questions in about 3-5 sentences each.

5x2=10

6. Explain T.S of microsporangium with a neat labelled diagram.
7. Draw a neat labelled diagram of V.S of Ovule.
8. Explain the structure of a dicotyledonous embryo with a neat labelled diagram.
9. Describe the characteristics of genetic code.
10. What are the essential requirements of the genetic material?
11. How did Alfred Hershey and Martha Chase establish that DNA is transferred from virus to bacteria?
12. Draw a neat labelled diagram of an adaptor molecule.

III Answer any two of the following questions in about 200 – 250 words each. 2x5=10

13. Explain the development of embryo sac with all the labelled diagrams.
14. Explain the structure of a pollen grain with a neat labelled diagram.
15. Explain Watson and Crick model of DNA with a neat labelled diagram.
16. Explain transcription in eukaryotes.

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SWAMY VIVEKANANDA RURAL PRE-UNIVERSITY COLLEGE

Chandapura, Anekal Tq., Bengaluru-99

II PUC FIRST QUARTERLY EXAMINATION, AUG - 2019

Time: 1hr 40 Mins

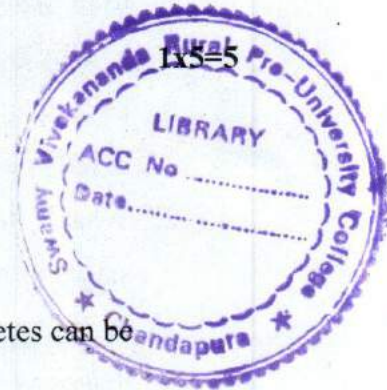
SUB: BIOLOGY

Max. Marks: 50

PART A

I Answer the following questions in about a word or in a sentence each.

1. Define adaptive radiation.
2. What are UTRs?
3. Which hormone is involved in the induction of parturition?
4. Banana is a true fruit but is also parthenocarpic fruit. Give reasons
5. A diploid organism is heterozygous for 4 loci. How many types of gametes can be produced?



PART B

II Answer any five of the following questions in about 3 – 5 sentences each.

2x5=10

6. Who developed DNA finger printing? Expand VNTR.
7. Sickle cell anaemia is caused by point mutation. Justify the statement.
8. Write the characteristic features of anther, pollen and stigma of wind pollinated flowers.
9. Spermatogenesis in human males is a hormone regulated process. Justify.
10. What is amniocentesis? Why has the government imposed a statutory ban in spite of its importance in the medical field?
11. Write a note on Klinefelter's syndrome.
12. What are analogous organs? Give an example.

PART C

III Answer any five of the following questions in about 40 – 80 words each.

3x5=15

13. Explain the process of conversion of hnRNA into functional mRNA.
14. With suitable diagram, describe the organisation of mammary gland.
15. Draw a diagram of an enlarged view of T.S of microsporangium of an angiosperm and explain the parts.
16. Draw a diagrammatic labelled diagram of the human female reproductive system.
17. Explain divergent evolution with two examples.
18. By taking Snapdragon as an example explain incomplete dominance.
19. Explain the structure of lac operon gene.

**PART D**

**IV Answer any four of the following questions in about 200 – 250 words each. 4x5=20**

20. a. Describe in sequence the events that lead to the development a 3 celled pollen grain from MMCs in angiosperm. (3)
- b. Why is the process of fertilisation in angiosperms termed as double fertilization. Explain. (2)
21. Briefly describe the process of spermatogenesis with a schematic representation.
22. What is menstrual cycle? Write the changes that occur in ovary and uterus in different stages of menstrual cycle.
23. Write a note on the development of female gametophyte. Illustrate the answer with suitable diagrams.
24. With a neat labelled diagram explain Stanley Miller's experiment.
25. Explain inheritance of two genes by dihybrid cross in garden pea plant.

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SWAMY VIVEKANANDA RURAL PRE-UNIVERSITY COLLEGE

Chandapura, Anekal Tq., Bengaluru-99

II PUC MID-TERM EXAMINATION, OCT - 2019

Time: 3Hr 15 Mins

SUB: BIOLOGY

Max. Marks: 70



**GENERAL INSTRUCTIONS:**

- A. The paper contains 4 parts: Part A, B, C and D. All parts are compulsory.
- B. Draw diagrams wherever necessary. Unlabelled diagrams do not carry any marks.

**PART A**

Answer the following questions in a word or in a sentence each.

1x10=10

1. What is negative regulation of Lac Operon?
2. Define pedigree analysis.
3. Pink flowering plant in Snapdragon is not a pure breeding stock. Why?
4. What is DNA polymorphism?
5. What is saltation?
6. What is vasectomy and tubectomy?
7. How does Penicillium reproduce asexually?
8. How do Leydig cells help in spermatogenesis?
9. In a pond, there were 200 frogs, 40 more were born in a year. Calculate the birth rate of the population.
10. What is Allen's rule?

**PART B**

Answer any five of the following questions in 3 – 5 sentences each.

2x5=10

11. What are the functions of these different parts of human male reproductive system?  
a. Epididymis   b. Sertoli cells   c. Bulbourethral glands   d. Vasa deferentia
12. What are the advantages offered by the seeds to Angiosperms?
13. Classify organisms based on temperature tolerance with an example each.
14. Distinguish between homogametes and heterogametes.
15. Explain antibiotic resistance observed in bacteria in light of Darwinian selection theory.
16. Mention two applications of DNA finger printing.
17. What is aminoacylation of tRNA?
18. Write a short note on Haemophilia.

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### PART C

Answer any five of the following questions in about 40 – 80 words each.

3x5=15

19. What are natural contraceptives? Explain its three methods.
20. Explain water pollination (Hydrophily) in water plants like Vallisneria and Zostera.
21. Draw a neat labelled diagram of male reproductive system.
22. Explain exponential or J shaped pattern of populations growth model.
23. What is multiple allelism? Explain with a suitable example.
24. Mention the salient features of genetic code.
25. What are the factors which affect Hardy Weinberg equilibrium?
26. Explain the packaging of DNA in eukaryotes.

### PART D

#### SECTION I

Answer any four of the following questions in about 200 – 250 words each.

4x5=20

27. Draw a neat labelled diagram of a human sperm and explain.
28. Explain major abiotic factors influencing the life of an organism.
29. a. Explain the structure of a dicotyledonous embryo. (3)  
b. Draw a neat labelled diagram of a mature embryo sac. (2)
30. Briefly explain origin and evolution of man.
31. Explain XX – XY type of sex determination in human.
32. Explain the process of translation.

#### SECTION II

Answer any three of the following questions in about 200 – 250 words each.

3x5=15

33. What are the four basic processes or factors responsible for fluctuation in population density? Explain.
34. What is oogenesis? Give a brief account of oogenesis.
35. Explain law of segregation with suitable example.
36. Explain Hershey and chase experiment to show DNA as genetic material.
37. Explain evolution by natural selection by considering industrial melanism in Peppered moth.

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**SWAMY VIVEKANANDA RURAL PRE-UNIVERSITY COLLEGE**

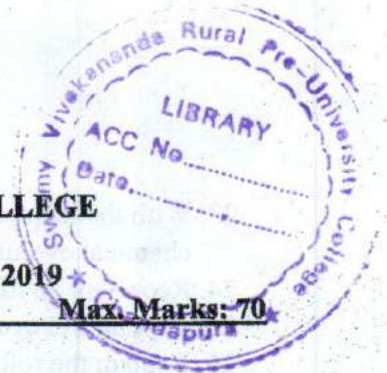
Chandapura, Anekal Tq., Bengaluru-81

**II PUC FIRST PREPARATORY EXAMINATION, DEC - 2019**

**Time: 3Hr 15 Mins**

**SUB: BIOLOGY**

**Max. Marks: 70**



**General instructions:**

- i. The question paper contains four parts A, B, C and D.
- ii. All the parts are compulsory.
- iii. Draw diagrams wherever necessary. Unlabeled diagrams or illustrations do not carry any marks.

**PART A**

**I Answer the following questions in a word or in a sentence each.**

**10x1=10**

1. Why is oxytocin necessary for parturition?
2. Name the oral contraceptive for the female developed by CDRI.
3. What are pleiotropic genes?
4. With reference to HGP, what do SNPs refer to?
5. Define divergent evolution.
6. What is the pathogen which causes malignant malaria?
7. Mention the strategy used to increase homozygosity in cattle for desired traits.
8. State Allen's rule.
9. Which region in India has the maximum number of amphibian species?
10. Construct a grazing and detritus food chain.

**PART B**

**II Answer any FIVE of the following questions in 3-5 sentences each wherever applicable.**

**5X2=10**

11. Mention any four vegetative propagules of Angiosperms.
12. How do flowers reward their insect pollinators? Explain.
13. Write the roles of any two accessory glands in human male reproductive system?
14. Explain law of segregation with a suitable example.
15. What are analogous organs? Give an example.
16. Differentiate between outbreeding and outcrossing.
17. What are the characteristics of Cancer cells?
18. What is brood parasitism? Give an example.

**PART C**

**III. Answer any FIVE of the following questions in about 8 – 10 sentences each wherever applicable.**

**5x3=15**

19. Explain T.S of young anther with a neat labelled diagram.
20. Describe the structure of pollen grain of angiosperm.
21. Why is DNA molecule a more stable genetic material than RNA? Explain.
22. Explain female heterogamety with the help of an example.

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23. With the help of a neat labeled diagram explain Stanley Miller's experiment in support of chemical evolution.
24. Represent an ideal pyramid of number in a grassland ecosystem and explain.
25. Explain life cycle of plasmodium.
26. Explain the role of microbes in household products.

#### PART D

#### SECTION I

**IV. Answer any FOUR of the following questions in about 200 – 250 words each, wherever applicable: 4x5=20**

27. Describe T.S of mammalian ovary with a sectional view diagram.
28. Draw a neat labeled diagram of human sperm and explain the structure.
29. Explain the regulation of Lac Operon in the absence and in the presence of Lactose as an inducer.
30. Explain the replication of retrovirus with a scheme.
31. Describe any five different methods of birth control.
32. Explain the steps involved in plant breeding technology to develop new genetic variety of a crop.

#### SECTION II

**Answer any THREE of the following questions in 200 – 250 words each, wherever applicable:**

**3x5=15**

33. What is transcription? Explain transcription in eukaryotes.
34. What is mutualism? Explain any four examples of mutualism.
35. What is population growth? Explain the factors responsible for fluctuating population density.
36. Explain species Area relationship with a graphical representation.
37. Describe the technology (MOET) that has successfully increased the herd size of cattle in a short time to meet the increasing demands of growing human population.

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SWAMY VIVEKANANDA RURAL PRE – UNIVERSITY COLLEGE  
Chandapura, Anekal Taluk, Bengaluru-560081

II PUC SECOND PREPARATORY EXAMINATION, JAN – 2020

Time: 3Hrs15Mins

SUBJECT: BIOLOGY (36)

MAX. MARKS: 70

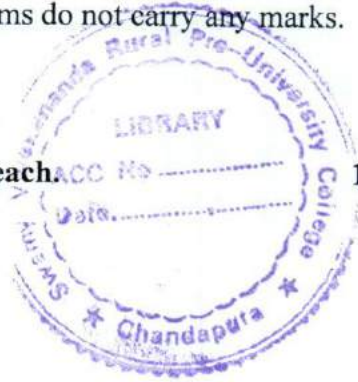
**GENERAL INSTRUCTIONS:**

- The paper contains 4 parts: Part A, B, C and D. Part D consists of two sections: section I and section II.
- All parts are compulsory.
- Draw diagrams wherever necessary. Unlabelled diagrams do not carry any marks.

**PART A**

Answer the following questions in a word or in a sentence each. 1x10=10

- What is colostrum?
- Papaya plant exhibit xenogamy only. Why?
- Define founder effect.
- What are oncogenic viruses?
- Name the source plant from which Morphine is extracted.
- What is somatic hybridisation?
- Mention the use of cyclosporin A.
- How are DNA fragments visualised in gel electrophoresis technique?
- Predators are prudent in nature. Why?
- What is snow blindness?



**PART B**

Answer any five of the following questions in 3 – 5 sentences each.

2x5=10

- Chances of survival is more in viviparous animals than in oviparous animals. Why?
- What is point mutation? Give an example.
- State Hardy Weinberg equilibrium. What are the factors that influence it?
- Draw a neat labelled diagram of an antibody molecule.
- How bee keeping is achieved successfully?
- Draw a labelled sketch of pBR322.
- Explain rivet popper hypothesis.
- Explain ex situ conservation of biodiversity.

P T O



## PART C

Answer any five of the following questions in about 40 – 80 words each.

3x5=15

19. Mention the vegetative propagules of these plants: Agave, Eicchornia, Ginger.
20. Explain hydrophily with respect to Vallisneria and Zostera.
21. Write causes, symptoms and karyotype of Klinefelter's syndrome and Turner's syndrome.
22. Explain natural selection with an example.
23. Differentiate between B (cells) lymphocytes and T (cells) lymphocytes.
24. Explain PCR technique.
25. Briefly explain succession in plants.
26. Describe the steps of decomposition.

## PART D

### SECTION I

Answer any four of the following questions in about 200 – 250 words each.

4x5=20

27. With the sectional view of seminiferous tubules, explain the process of spermatogenesis.
28. Describe the Assisted Reproductive Techniques employed for a childless couple.
29. Describe Messelson and Stahl's experiment.
30. Briefly explain the process involved in plant breeding technique.
31. Write a note on transgenic animals.
32. Explain the inheritance of two genes.

### SECTION II

Answer any three of the following questions in about 200 – 250 words each.

3x5=15

33. Explain solid waste management.
34. Define commensalism. Explain this interaction with examples.
35. Describe the process of translation.
36. With a neat labelled diagram, explain anatropous ovule.
37. Explain bio gas plant with a neat labelled diagram.

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