Reg. No. \_\_\_\_\_\_\_\_\_\_\_\_\_

****

**End Semester Examination – Nov / Dec – 2019**

|  |  |  |  |
| --- | --- | --- | --- |
| **Code :** | **18AG1008** | **Duration :** | **3hrs** |
| **Sub. Name :** | **PRINCIPLES OF GENETICS AND CYTOGENETICS** | **Max. Marks :** | **100** |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Q. No.** | | **Questions** | **Course Outcome** | **Marks** |
| **PART - A (20 X 1 = 20 MARKS)** | | | | |
| 1. | Trisomic is genetically denoted as \_\_\_\_\_\_\_\_\_\_\_\_ . | | CO3 | 1 |
| 2. | Lac operon concept was proposed by \_\_\_\_\_\_\_\_\_\_\_\_. | | CO1 | 1 |
| 3. | Region of telomere is made up of\_\_\_\_\_\_\_\_\_\_\_\_\_. | | CO3 | 1 |
| 4. | Longitudinal section of chromosome is called as \_\_\_\_\_\_\_\_\_\_\_. | | CO3 | 1 |
| 5. | Substitution of purine by a purine is called as \_\_\_\_\_\_\_\_\_\_\_\_. | | CO3 | 1 |
| 6. | Cytoplasmic male sterility is caused mainly by \_\_\_\_\_\_\_\_\_\_\_. | | CO3 | 1 |
| 7. | Blood group is an example for \_\_\_\_\_\_\_\_\_\_. | | CO2 | 1 |
| 8. | Quick way of producing complete homozygous lines is \_\_\_\_\_\_\_\_\_\_. | | CO1 | 1 |
| 9. | The phenotypic ratio of recessive epistasis is \_\_\_\_\_\_\_\_\_\_\_. | | CO2 | 1 |
| 10. | Nilsson-Ehle who studied traits in wheat, proposed the theory of \_\_\_\_\_\_\_\_\_\_. | | CO1 | 1 |
| 11. | Pattern bald ness is example for \_\_\_\_\_\_\_\_\_\_\_. | | CO2 | 1 |
| 12. | Phenyl ketonuria is due to \_\_\_\_\_\_\_\_\_\_. | | CO2 | 1 |
| 13. | During transcription \_\_\_\_\_\_\_\_\_\_ enzyme read and produce antiparallel RNA strand. | | CO3 | 1 |
| 14. | The gene sequence which initiate transcription initiation process is \_\_\_\_\_\_\_\_\_\_. | | CO3 | 1 |
| 15. | Chromosome having centromere at one end is called \_\_\_\_\_\_\_\_\_\_. | | CO1 | 1 |
| 16. | The unit of measurement of linkage is \_\_\_\_\_\_\_\_\_\_. | | CO2 | 1 |
| 17. | Pattern of heredity in which one allele is not completely dominant over another is \_\_\_\_\_\_\_\_\_\_. | | CO3 | 1 |
| 18. | The most common initiation codon in eukaryotes is \_\_\_\_\_\_\_\_\_\_\_\_. | | CO3 | 1 |
| 19. | EMS is an example for \_\_\_\_\_\_\_\_\_\_\_\_. | | CO2 | 1 |
| 20. | Parts of secondary construction is called as \_\_\_\_\_\_\_\_\_\_\_\_. | | CO1 | 1 |

|  |  |  |  |
| --- | --- | --- | --- |
| **PART – B (10 X 5 = 50 MARKS)**  **(Answer any 10 from the following)** | | | |
| 21. | Draw the structure of rice chromosome. Explain chromonemata. | CO1 | 5 |
| 22. | Define primary and secondary constriction. Explain their functions. | CO1 | 5 |
| 23. | Define Epistatic interaction. Explain dominant, recessive and duplicate recessive. | CO2 | 5 |
| 24. | Write notes on pseudo and multiple alleles. | CO2 | 5 |
| 25. | Write short notes on haploids and dihaploids. | CO2 | 5 |
| 26. | Elaborate on sex limited and influenced genes. | CO1 | 5 |
| 27. | Write short notes on Tetrasomic and nullisomic. | CO2 | 5 |
| 28. | Define continuous and discontinuous variation. | CO3 | 5 |
| 29. | Write briefly on mutagens and multigenes. | CO3 | 5 |
| 30. | What is DNA and RNA replication? | CO3 | 5 |
| 31. | Explain metabolic disorders. | CO3 | 5 |
| 32. | Describe Anaphase I and II and its significance. | CO2 | 5 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **PART – C (2 X 15 = 30 MARKS)**  **(Answer any 2 from the following)** | | | | |
|  | | | | |
| 33. | a. | Enumerate the chromosomal structural variations. | CO2 | 8 |
| b. | Write down the importance of chromosomal number variations and its cytology. | CO2 | 7 |
|  |  |  |  |  |
| 34. | a. | Differentiate between micro and macromutation with successful examples. | CO3 | 7 |
| b. | Polygenic characters are more important than single gene trait. Explain. | CO1 | 8 |
|  |  |  |  |  |
| 35. | a. | Explain the operon concept with lactose metabolism. | CO3 | 7 |
| b. | How to measure the linkage? Explain different methods of estimation. | CO2 | 8 |