

Write the following information in the first page of Answer Script before starting answer

ODD SEMESTER EXAMINATION: 2020-21

Exam ID Number _____

Course _____ Semester _____

Paper Code _____ Paper Title _____

Type of Exam: _____ (Regular/Back/Improvement)

Important Instruction for students:

1. Student should write objective and descriptive answer on plain white paper.
2. Give page number in each page starting from 1st page.
3. After completion of examination, Scan all pages, convert into a single PDF, rename the file with Class Roll No. (2019MBA15) and upload to the Google classroom as attachment.
4. Exam timing from 10am – 1pm (for morning shift).
5. Question Paper will be uploaded before 10 mins from the schedule time.
6. Additional 20 mins time will be given for scanning and uploading the single PDF file.
7. Student will be marked as ABSENT if failed to upload the PDF answer script due to any reason.

B.Sc. BIOTECHNOLOGY
THIRD SEMESTER
BIOTECHNOLOGY & HUMAN WELFARE
BBT – 302 [REPEAT]

Duration : 3 hrs.

Full Marks : 70

(PART-A: Objective)

Time : 20 min.

Marks : 20

Choose the correct answer from the following: 1×20=20

1. The technique to distinguish the individuals based on their DNA patterns is called:
 - a. DNA fingerprinting
 - b. DNA profiling
 - c. Molecular fingerprinting
 - d. All of these
2. The genome consist of exons by percent:
 - a. 0.5-1
 - b. 0.8-1.4
 - c. 1-1.2
 - d. 1.1-1.5
3. Bioaugmentation is a process that involves:
 - a. Using plant for bioremediation
 - b. Bioventing
 - c. Sludge removal
 - d. Adding microbes to a cleanup site
4. The process of decomposition of agricultural waste by earthworms is called:
 - a. Land fills
 - b. Shredding
 - c. Vermi-composting
 - d. Composting
5. Actinomycin D and mitomycin C are used as:
 - a. Antibiotics for control of plant diseases
 - b. Antibiotics used in animal feed and veterinary medicine
 - c. Antibiotics used as food preservatives
 - d. Antibiotics for antitumor activity
6. Which of the following are the storage polysaccharides?
 - a. Glycogen
 - b. Cellulose
 - c. Glucose
 - d. Chitin
7. Deletion of isopentenyl transferase (ipt) results in:
 - a. Rooty crown gall
 - b. Shooty crown gall
 - c. Large tumour
 - d. None of the above
8. The method which can be used to amplify fragments of gene may be:
 - a. TCR
 - b. PCR
 - c. MCR
 - d. UCR
9. When all the monosaccharides in a polysaccharide are same type, such type of polysaccharide is called a:
 - a. Glycogen
 - b. Homoglycan
 - c. Heteroglycan
 - d. Oligosaccharide

10. The estimated number of protein-coding genes ranges from:
- 30,000-40,000
 - 35,000-42,000
 - 40,000-46,000
 - 50,000-60,000
11. DNA profiling is used:
- In Forensic studies and in cases of disputed parentage
 - In pedigree analysis and to study migration pattern
 - To confirm cell line identity
 - All of these
12. What is the size of micropipette tip used in microinjection?
- 0.5-10 μm
 - 0.5-1 μm
 - 0.5-100 μm
 - 0.5- 1000 μm
13. The allosteric inhibitor of an enzyme:
- Causes the enzyme to work faster
 - Bind to the active site
 - Participates in feedback regulation
 - Denatures the enzyme
14. Which of the following is not a free living aerobic bacteria?
- Azotobacter
 - Klebsiella
 - Cyanobacteria
 - Clostridium
15. Which of the following bacterium is called as the superbug that could clean up oil spills
- Bacillus subtilis*
 - Pseudomonas putida*
 - Trichoderma* sp.
 - Bacillus denitrificans*
16. RAPD is a:
- DNA sequencing based method
 - Restriction digestion based method
 - PCR based method
 - All of these
17. Industrial production of Xanthan are from:
- Xanthomonas oryzae*
 - Xanthomonas citri*
 - Xanthomonas campestris*
 - Xanthomonas arcuicola*
18. The hybridomas are made by
- Fusing T cells with myeloma cells
 - Fusing B cells with myeloma cells
 - Fusing T helper cells with myeloma cell
 - Fusing B memory cells with myeloma cells
19. Which of the “vir” proteins are involved in the formation of conjugal tube between plant and bacterial?
- vir B and vir D1
 - vir B and vir D4
 - vir C and vir D4
 - vir C and vir D1
20. Which of the following is a mismatch?
- Polymerase -Taq polymerase
 - Template - double stranded DNA
 - Primer - oligonucleotide
 - Synthesis - 5' to 3' direction

(PART-B : Descriptive)

Time : 2 hrs. 40 min.

Marks : 50

[Answer question no.1 & any four (4) from the rest]

1. Discuss the concept and the salient features behind the development of Human Genome Project. 10

2. a. What do you mean by polysaccharides? Discuss the production of any one industrially used polysaccharide. 5+5=10
b. Discuss the process of alcohol production

3. a. Explain the organization of T-DNA. 4+6=10
b. Describe the process of T-DNA transfer with reference to the "vir" genes involved.

4. a. What are the objectives behind protein engineering and how it is done? 5+5=10
b. Discuss three types of Enzyme Inhibition.

5. a. What do you mean by monoclonal antibody? Discuss in terms of its formation. 5+5=10
b. Briefly discuss the various types of recombinant vaccines.

6. a. Discuss the various interaction that takes place between plants and microbes. 5+5=10
b. How the improvement of the qualitative trait of the livestock takes place?

7. a. What do you mean by hydrocarbon? Discuss in terms of its degradation techniques. 5+5=10
b. Discuss various degradation techniques of agricultural waste.

8. a. What are the various types of PCR? 3+3+4=10
b. How microsatellites DNA are different from minisatellite DNA?
c. Discuss briefly the working principle of RAPD.

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