BT207 Assignment Question for classes 24th and 25th of January 2023

1. List 5 housekeeping and inducible genes.
2. What are the contaminants and small molecules while extracting genomic DNA?
3. What is the composition of lysis buffer?
4. What is scanning in a spectrophotometric reading? Explain its importance.
5. What is blanking? Explain its significance.
6. What are the different spectrophotometric wavelengths used while quantifying nucleic acids?
7. What is stacking effect?
8. What is melting curve of DNA?
9. What is A260/A280? Mention the acceptable range.
10. What is A260/A230? Mention the acceptable range.
11. How to remove the contaminants present in isolated DNA? Explain.
12. Explain the gel-based method used to qualify isolated DNA.
13. What is the percent of agarose gel used to electrophorese RNA?
14. Name the various fluorescent methods used to check the purity of DNA.
15. Briefly explain plasmid DNA isolation from bacteria.
16. What is the need to amplify the gene of interest?
17. What is a primer? Explain specificity of primers.
18. Explain briefly various considerations while designing primers.
19. Explain PCR. What are the steps involved? Name the instrument used to amplify GoI.
20. Name the biological mechanism which is the background principle of PCR.
21. Differentiate between PCR and Replication.
22. What is cycle number in PCR?
23. What is threshold cycle in RT-PCR?
24. Name the polymerase used in PCR.
25. What are the components of a PCR mix? Explain.
26. List out the different types of PCR.
27. What are important factors to be considered for an optimal PCR?
28. What are homodimers, heterodimers and hairpin structures?
29. Explain the formula to calculate melting temperature of primers.
30. What is annealing temperature?
31. What are degenerate primers? Explain.
32. List out the IUPAC naming convention of nucleotide bases.
33. What are CODEHOP primers? Explain.