EGRA SARADA SASHI BHUSAN COLLEGE

DEPARTMENT OF BOTANY

SEM-IV/CBCS/HONS/PAPER-VIII/C8T8/2020

MODEL QUISTIONS

A.Answer the following Objective Questions.

1.What is mt-DNA?
2.What is DNA replication?
3.What is the difference between conservative ,semiconservative and dispersive replication?
4.Name the enzymes involved in DND replication both in prokaryotic and Eukaryotic.
5.Write the subunits of DNA polymerase –III with diagram.
6.Write the two specific functions of DNA ligase.
7.Mention the proteins associated with DNA replication.
8.What is the function of Topoisomerase, and SSB Protein and RNA primer>
9.What do you mean by Genetic and non-Genetic RNA?
10.Difference between m-RNA.t-RNA,r-RNA.
11.Difference between prokaryotic m-RNA and Eukaryotic m-RNA.
12.What is informosomes?
13.What do you mean by monocistronic m-RNA and polycistronic m-RNA?
14.What is termination codon and ignition codons?
15.Name the factors specially required for ignition of r-RNA.
16.What is supernatant RNA?
17.What is ribozymes?
18.What do you mean by heterogenecity of m-RNA?
19.What is TATA box and CAAT box?
20.Differences between prokaryotic and Eukaryotic Transcription.
21.What is RNA splicing and spliceosome?
22.Comparison between replication and transcription.
23.Explain the triplet nature of Genetic code.
24.What do you mean non-overlapping of codon?
25.What is Wobble hypothesis?
26.What is Chaperones?
27.What is Hsp70 and Hsp60 proteins?
28.What is Shine-Dalgarno Sequence?
29.What is inducer and repressor in lac-operon?
30.What is corepressor and aporepressor?
31.Name the structural gene and function of lac-operon.
32.What is the function of promoter gene and operator gene?
33.What is *crp* gene?
34.What is attenuation?
35.what is recombinant DNA?
36.Write four characters of Type-I restriction endonuclease.
37.Write the characteristic features of ideal vectors.
38.Write the function of Agarose gel and Polyacrylamine gel.
39.What is Reverse transcriptase enzyme?Which the source of this enzyme?
40.Name the inhibitors of protein synthesis.
41.What is amino aceyl t-RNA synthetase?
42.What is split gene?
43.What is exon and intron?
44.what is denaturation and renaturation of DNA?
45.What is cot value?
46.What is cp-DNA?

B.Answer the following questions.

1.Describe about the structre of lac-operon model.
2.Describe the negative controle of gene regulation in prokaryotic cell.
3.Describe the positive controle of gene regulation in prokaryotic cell.
4.Describe the tryptophan operon in E.coli.
5.Describe about the transcription process in prokaryotic cell.
6.Describe about the transcription process in Eukaryotic cell.
7.Describe about the DNA as the carrier of genetic information by Griffith's and Harshy experiment.
8. Describe about the DNA as the carrier of genetic information by McLeod and McCarty.
9.Describe about the DNA structre by Watson and Crick.
10.Describe about the m-RNA structre with suitable diagram.
11.Describe the Clover leaf model of t-RNA molecule.
12.Differentiate between euchromatin and heterochromatin.what do you mean constitutive and facultative heterochromatin?

C.Answer the following questions.

1.Describe about the rolling circle model.
2.Describe about the deciphering of genetic code.
3.Describe about the different properties of genetic code.
4.Describe about the semi-conservative replication by Meselson and Stahl's experiments.
5.What is central dogma?Describe about the translation process of protein synthesis in prokaryotes.
6.Write the name of raw material for protein synthesis.Describe the translation process in eukaryotes.
7.Write the role of Ribosomes in protein synthesis by sub unit assembly.
8.Write about the elongation and termination phase of polypeptide.
9.Describe the theta mode of replication.
10.Write the initiation phase of DNA replication.

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MODEL QUISTIONS

A.Answer the following objective questions.

1.What is autoecology?
2.What is synecology?
3.What is biome?
4.What do you mean by edaphic factor and biotic factors?
5.What is pedogenesis?
6.What is eluviations and illuviations?
7.What is Sunken stomata?Where it is found?
8.What is limiting factor?
9.What is ecads?
10.What is ecotypes?
11.What is ecological nich?
12.What is ecological amplitude?
13.What is Ecotone?
14.What is Edge effect?
15.What is the difference between crude dencity and ecological dencity?
16.What is natalaty and mortality?
17.What do you mean by vital index?
18.What do you mean by carrying capacity?
19.Differentiate between r-selected and k-selected population.
20.What do you mean by immigration and emigration?
21.What do you mean by phanerophytes,chamaephytes,hemicryptophytes,cryptophytes and therophytes of plant.
22.What is psammosere?
23.What is nudation and invasion?
24.What is retrogressive succession?
25.What do you mean seral stage?
26.What do you mean climax community?
27.What is deflected succession?
28.What is lentic?
29.What is GPP and NPP?
30.Difference between food chain and food web.
31.What do you mean by bio-geochemical cycles?
32.What is allopatric and sympatric species?
33.What is continental drift?
34.What is endemism?
35.What do you mean by mutualism?
36.What is parasitism?
37.What is ammensalism?
38.What do you mean by Gause's Principle?
39.Differentiate between intraspecific and interspecific competition.
40.Write the feature of SPAC.
41.What do you mean by physiologically dry soil?

B.Answer the following questions.

1.What is precipitation?Describe different types of precipitation.
2.Describe the formation or origin of soil.
3.Write the physical,biological and chemical compositions of soil.
4.Write the role of climate in soil development.
5.Describe the soil profile with diagram.
6.Difference between hydrophytes,mesophytes and xerophytes on morphological,anatomical and physiological characters.
7.Write about the Shelford's law of tolerance.
8.Describe the different types of ecological nich.
9.What is population ecology?Describe about the different characters of population.
10.Describe about the analytical characters of community.
11.Describe about the synthetic characters of community.
12.What is succession?Describe the different types of succession.
13.Describe the general process of succession.
14.Describe the different stages of hydrosere with example.
15.Describe about the different stages of xerosere with example.
16.Describe the different abiotic and biotic component of ecosystem.
17.What is ecological pyramid?Describe the different types of ecological pyramids with example.
18.What food chain?Describe about the different types of food chain with example.

C.Answer the questions.

1.Describe about the different models of energy flow in ecosystem.
2.Describe about the carbon cycle with diagrammatic.
3. Describe about the nitrogen cycle with diagrammatic.
4. Describe about the phosphorus cycle with diagrammatic.
5.Describe different types of water found in soil.
6.Describe about the grassland ecosystem and forest ecosystem.
7.Describe about the phytogeographical regions of India.
8.Describe about the temperate biomes and tundra biomes.

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MODEL QUISTIONS

Q.A. Short Type Question:

1. Define systematics, identification, classification, nomenclature.
2. Write the functions of Herbaium.
3. Name two important botanical garden of West Bengal, India, and World.
4. What is taxon?
5. What is taxonomic hierarchy?
6. What do you mean by valid publication & effective publication?
7. What is the full form of APG? Who proposed the term APG?
8. What is the full form OTUs?
9. Write the differences between Phenograms and cladograms.
10. Define holotype, paratype, neotype, leptotype.
11. What do you mean by principle of priority?
12. Define monophyly, paraphyly and polyphyly.
13. Write the differences between homology and analogy.
14. What do you mean by biological species concept?
15. Who is the father of taxonomy?
16. Write the difference between single access and multi access.
17. What do you mean by artificial, phenetic and phylogenetic system of classification?
18. What is the full form of ICN?
19. What is Anthophyta?
20. What do you mean by Plesiomorphic and Apomorphic characters?
21. What do you mean by heterobathmy?

Q.B. Write Short note on:

1. e-flora, monograph, journal, virtual herbarium, author citation, principles and rules of ICN, Co-evolution of angiosperms and animals.

Q.C. Long type question:

1. Write the palynological and phytochemical evidences of taxonomy?
2. Write the advantage and disadvantage of Bentham and Hooker system of classification.
3. Write the merits and demerits of APG III classification.
4. Briefly discuss the Engler and Prantl classification.
5. Are Angiosperms Monophyletic or Polyphyletic- Discuss on it.
6. Define numerical taxonomy. Write the principle of numerical taxonomy. Write the steps to construction of taxonomic groups.
7. Mention the merits, demerits and application of numerical taxonomy.