

288. It is a fossilized fuel:  
 (A) Water (B) Oil (C) Wind (D) Oil
289. Which of the following is a renewable resource?  
 (A) oil and air (B) water and oil (C) oil and gas (D) air and water
290. The world population is expected to be nearly doubled by:  
 (A) 2020 (B) 2030 (C) 2040 (D) 2050
291. The decline in thickness of ozone layer is caused by increasing level of:  
 (A) Chlorofluorocarbon(CFCs) (B) Nitrogen  
 (C) Chlorine (D) Carbon Dioxide
292. Ozone in the upper layer of atmosphere that filters:  
 (A) IR radiation (B) UV radiation (C)  $\beta$  radiation (D)  $\alpha$  radiation
293. Some detergents contain a lot of:  
 (A) Sulphur (B) Carbon (C) Phosphate (D) Carbonates
294. A single chlorine atom can react with ultraviolet rays and destroy as many as ozone molecule:  
 (A) One million (B) Two million (C) One billion (D) Two billion
295. Water present in water and ice cap is:  
 (A) 01% (B) 02% (C) 03 % (D) 04%
296. In pure form, Ozone is:  
 (A) Greenish (B) Reddish (C) Yellowish (D) Bluish
297. Which of the following act as environmental buffers  
 (A) Deserts (B) Forests (C) Industry (D) Fossil fuels
298. Oxides of Nitrogen cause:  
 (A) Lung Cancer (B) Cough (C) Brain damage (D) Cholera
299. The atmosphere gas behaves like glass sheet of green house is:  
 (A) Oxygen (B) Hydrogen (C) Carbon dioxide (D) Nitrogen

## (SUBJECTIVE PART)

### SECTION-I

#### SHORT QUESTIONS (SQs)

1. What is lithotripsy?
2. What are pyrogens?
3. Differentiate between hypotonic and hypertonic environment.
4. What are osmoconformers and osmoregulators?
5. What is extracorporeal shock wave lithotripsy?
6. What are flame cells? Why they are called so?
7. Write structural formula of urea and uric acid.
8. Define homeostasis. Give its importance.
9. Differentiate between poikilotherms and homeotherms.
10. Differentiate between ectotherms and endotherms.
11. Differentiate between hemodialysis and peritoneal dialysis.
12. What are xerophytes? Give two adaptations of xerophytes.
13. Draw and label urea cycle.
14. Illustrate the function of Malpighian tubules.
15. What is sciatica and its causes?
16. What is foreman triosseum? How it is formed?
17. What is the role of vascular cambium?
18. What is axial skeleton?

19. What are synovial joints?
20. Differentiate between active and passive flight.
21. How is rickets produced? (LB-2012)
22. What are the causes of herniation of discs?
23. What is the difference between tetanus and muscle tetany?
24. What is the difference between exoskeleton and endoskeleton?
25. What is the hematoma formation? (LB-2016)
26. Differentiate between effective and recovery stroke.
27. What are planigrade and unguigrade?
28. Characterize collenchyma cells.
29. Compare phototropism and geotropism.
30. Compare hinge joint with ball and socket joint.
31. Define nastic movement.
32. Define antagonistic movement of muscles.
33. What is the process of ecdysis (moulting)?
34. Differentiate between sclerenchyma and collenchyma cells.
35. Differentiate between fibers and sclereids.
36. Differentiate between compact bone and spongy bone. Give only two differences.
37. Distinguish between axial skeleton and appendicular skeleton.
38. Differentiate between Osteoporosis and Osteomalacia.
39. Differentiate between brachialis and brachioradialis.
40. Differentiate between bone and cartilage.
41. Differentiate between ligament and tendon.
42. What is the role of placenta in human?
43. What is seed dormancy? Give its importance.
44. What is the role of interstitial cells in sperm production?
45. What is the structure and function of corpus luteum?
46. Write down at least two important measures to prevent AIDS.
47. What are Oviparous, Viviparous and Ovoviviparous animals?
48. Classify the plants according to photoperiodic requirement for flowering.
49. Define photoperiodism and write its effects in plants.
50. Differentiate between haploid parthenogenesis and diploid parthenogenesis.
51. Differentiate between menopause and ovulation.
52. Differentiate between internal and external fertilization.
53. Differentiate between spermatogenesis and oogenesis.
54. Differentiate between identical twins and fraternal twins.
55. How lactation differ from gestation?
56. How test tube babies are produced?
57. What is the composition of air of terrestrial ecosystem?
58. What is the effect of human impact on Tundra ecosystem?
59. What is the effect of human impact on Desert ecosystem?
60. What is the range of rain fall and temperature in Temperate Deciduous Forest
61. What are the four major requirements for life?
62. What is meant by layering in a grassland ecosystem?
63. Differentiate between climate and weather.
64. Differentiate between Alpine and Boreal forests.
65. Differentiate between Zooplankton and Phytoplankton.
66. Differentiate between Prairies and Savanna.
67. Differentiate among littoral, limnetic and profundal zone.
68. Enlist two adaptations in plants and two in animals for a terrestrial ecosystem.
69. Give the name of some major ecosystems on land in Pakistan.
70. Name six major terrestrial biomes.
71. Mention the characteristics of plant life in desert ecosystem.
72. What is acid rain?

73. What is Eutrophication?
74. Write names of various types of pollution.
75. What are the main sources of water pollution?

## **SECTION-II**

### **SHORT QUESTIONS (SQs)**

1. What is innate behavior?
2. What is the role of hypothalamus?
3. What is habituation? Give an example
4. What is the role of thyroxine?
5. What is the role of vasopressin/ADH and oxytocin hormone?
6. What is the function of estrogen and progesterone?
7. What are axons and dendrites?
8. What is reflex arc?
9. What are the symptoms of Alzheimer's disease?
10. What is the difference between CNS and PNS?
11. What is the function of parathyroid gland or parathormone?
12. What is Parkinson's disease?
13. What are gastrin and secretin?
14. Write function of photoreceptors and nociceptors
15. Compare Circadian and Circannual rhythms
16. Define the term hormone, give one example?
17. Define feedback mechanism
18. Differentiate between biorhythms and diurnal rhythms
19. Differentiate between etiolation and chlorosis
20. Differentiate between sympathetic and parasympathetic nervous system
21. Differentiate between active and resting membrane potential
22. Give two commercial applications of Gibberellins
23. Give effects of nicotine on blood vascular system and digestive system in man
24. Explain the functions of two hormones secreted by Islets of Langerhans
25. What is Bombay phenotype?
26. What is SRY gene? How it is transferred?
27. What are the genes and alleles?
28. What do you know about hypophosphatemic rickets?
29. What are pseudoautosomal genes?
30. What is haemophilia and its various types?
31. What is the role of blood groups in establishing parentage?
32. What is meant by universal blood donor and universal recipient?
33. What is crossing over? What is its importance?
34. What is meant by erythroblastosis foetalis?
35. What is meant by linkage, linked genes and linkage groups?
36. What is test cross? Why did Mendel suggest this cross?
37. What is test cross? Give its uses
38. What is the difference between heterogametic and homogametic individuals?
39. What are compound sex chromosomes and their example?
40. Compare monohybrids with dihybrids
41. Define laws of Mendel
42. Differentiate between phenotype and genotype
43. Differentiate between incomplete dominance and co-dominance
44. Differentiate between gene and genome
45. Differentiate between homozygous and hemizygous

46. Differentiate between homozygous and heterozygous
47. Differentiate between dominant trait and recessive trait
48. Differentiate between qualitative and quantitative traits
49. Differentiate between IDDM and NIDDM
50. Differentiate between multifactorial and polygenic traits
51. Differentiate between probability and product rule
52. Differentiate between protanopia, deuteranopia and tritanopia
53. Differentiate between sex-limited and sex-influenced traits
54. Distinguish between polygenes and pleiotropy
55. Give the concept of fixed allele
56. How sex determination occurs in yeast?
57. What is a probe?
58. What is gene pharming?
59. What is aspartame?
60. What is gene therapy?
61. What is meant by cloning?
62. What are Palindromic sequences?
63. What are the various methods of gene or DNA sequencing?
64. What is the biodegradable plastic and its origin?
65. What is the role of suicide gene in transgenic bacteria?
66. What is the advantage of genetic engineering of C4 plants?
67. What is Ex-vivo gene therapy?
68. What is a genome and genomic library?
69. Define biotechnology
70. Define Molecular scissors
71. What is the role of molecular carrier-the vector?
72. Explain the importance of gene sequencing
73. What is ammonification?
74. What is a Mycorrhiza?
75. What is grazing? How grazing affect the texture of soil?
76. What is biome?
77. Briefly write about secondary succession
78. Define succession and name its types
79. Define biogeochemical cycles
80. Define and describe biotic components of an ecosystem
81. Define food chain and food web
82. Differentiate between population and community
83. Differentiate between habitat and niche
84. Differentiate between autecology and synecology
85. Differentiate between consumers and decomposers
86. Differentiate between primary and secondary succession

### **SECTION-III**

#### **SHORT QUESTIONS (SQs)**

1. What do you mean by open growth?
2. What is neurocoel?
3. What is present goal of gerontology?
4. What is gastrocoel and from which germ layer it is originated?
5. What is Henson's node? Give its role.
6. What is meant by discoidal cleavage?
7. What do you mean by lateral meristem.

8. What is the difference between epiblast and hypoblast?
9. Briefly describe the external and internal factors that affect growth in plants.
10. What are the causes of aging and how aging can be slowed down?
11. Define gastrulation in chick.
12. Define growth correlations.
13. What are primary organizer and inducer substances?
14. Define regeneration with examples.
15. Define teratology and teratogens?
16. Differentiate between area pellucida and area opaca.
17. Differentiate between gerontology and teratology.
18. Differentiate between growth and development.
19. Differentiate between primary and secondary growth.
20. Differentiate between somatic and splanchnic mesoderm.
21. How do final size of cells of cortex and tracheids is attained in zone of maturation?
22. How notochord is formed in chick embryo?
23. How primitive streak is formed?
24. State dedifferentiation of cells.
25. State the role of gray vegetal and grey equatorial cytoplasm.
26. What is semi-conservative replication of DNA?
27. What is sickle cell anemia?
28. What is transformation?
29. What is translation?
30. What are mutagens? Give one example.
31. What are the contributions of P.A. Levene for determining the structure of DNA?
32. What is central dogma?
33. Where codon and anticodon are situated?
34. Differentiate between heterochromatin and euchromatin.
35. What do you mean by mutations?
36. What is phosphodiester linkage? Draw structural formula.
37. Compare replication, transcription and translation.
38. Define chromosomal theory of inheritance.
39. What do you mean by karyotype? Give its significance.
40. Define nucleosome.
41. Define nucleotide and nucleoside.
42. Define one gene/one polypeptide hypothesis?
43. Define point mutations. Give one example.
44. What is the function of RNA polymerase in transcription?
45. Differentiate between sense and anti-sense strands of DNA.
46. Differentiate between rough and smooth type of bacteria.
47. Enlist different shapes of chromosome.
48. What are Okazaki fragments?
49. Give the role and kinds of tRNA.
50. How many types of DNA polymerases are found, write down their names?
51. What is Necrosis?
52. What is tumor?
53. What is Klinefelter's syndrome?
54. What is the importance of bivalent formation?
55. What happens during metaphase I?
56. What are mutagens? Give one example.
57. Write symptoms of Down's syndrome.
58. What is Turner's syndrome?
59. What is mitotic apparatus? Give its functions.
60. Define cell cycle.
61. What is non-disjunction or meiotic errors?