

NOTE: Attempt all questions of Section-A by filling the corresponding bubble on the MCQ ANSWER SHEET and return it to the Superintendent within given time, even if you have not attempted any question.

## SECTION-A

Time: 20 Minutes

Marks: 18

1. Change in gene frequencies in small population by chance are concerned with .....  A) genetic drift, B) genetic pool, C) genetic recombination, D) genetic mutation
2. Graphical representation to show number of organism, energy relationship and biomass of an ecosystem is .....  A) pyramid of number, B) pyramid of biomass, C) food chain, D) ecological pyramid
3. Allan Maxam and Walter Gilbert developed DNA sequencing method called .....  A) cleavage method, B) chain reaction, C) chemical cleavage, D) none of these
4. Vaccination against hepatitis B virus is .....  A) live attenuated vaccine, B) virus, C) sub unit vaccine, D) toxoid vaccine
5. All are greenhouse gases except .....  A) nitrous oxide, B) O<sub>2</sub>, C) CO<sub>2</sub>, D) CFC
6. The spiral ladder like DNA is converted into straight ladder form by an enzyme .....  A) DNA gyrase, B) polymerase, C) DNA lygase, D) exonuclease
7. Mechanoreceptors which detects pressure are called .....  A) meirsnor's corpuscles, B) pacinlan's corpuscles, C) free nerve ending, D) no dceptor
8. A tube of 10 to 12 cm long, 2 cm wide having 16 to 20 horse shoe incomplete rings in neck region is .....  A) pharynx, B) larvynx, C) trachea, D) bronchl
9. Which one is not included in symptoms of lungs cancer?  A) constant chest pain, B) coughing, C) fatigue, D) longness of breath
10. The cause of chronic renal failure is .....  A) diabetes, B) hypertension, C) use of analgesic drug, D) all of these
11. The muscles fibers are cylindrical unbranched and with a diameter of .....  A) 10-60, B) 10-80, C) 10-100, D) 10-120
12. The main function of Schwann cell is to make .....  A) Myelin Sheath, B) Soma, C) Nirsi Granule, D) Node of Ranvier
13. Insulin is secreted by .....  A) alpha cell, B) beta cell, C) delta cell, D) acinar cell
14. The behaviour that uses reasons, calculations and judgements to solve a problem, is called .....  A) aggression, B) insight, C) altruism, D) instrumental
15. The uterine layer which is shed with each menstrual cycle is .....  A) tunica albuginea, B) myometrium, C) endometrium, D) perimetrium
16. In which trimester the foetal sex become apparent through ultrasound test?  A) first, B) second, C) third, D) between first and second
17. Drosophila and human follow the sex determining mechanism.  A) xy-xx, B) xo-xx, C) xx-xy, D) wz-zz
18. The initiation phase in DNA replication is characterized by .....  A) replication bubble, B) replication fork, C) both A&B, D) none of these

F-440

**12191  
BIOLOGY  
PART-II**

**Time: 2 Hours 40 Minutes**

**SECTION-B**

**Marks: 40**

1. Attempt any ten of the following. All carry equal marks.
- i. How transport of  $O_2$  takes place in blood?
  - ii. Write a brief note on structure and function of nephron.
  - iii. Mention different vertebral groups in human vertebral column.
  - iv. What is heroine? Write medical uses and misuses of this drug.
  - v. Write a brief note on hormonal role of ovaries.
  - vi. Define spermatogenesis. How sperm formation takes place in male human?
  - vii. Define aging. Write six signs and symptoms of aging.
  - viii. What is invitro fertilization (IVF)?
  - ix. Differentiate between co-dominance and over dominance.
  - x. What is euploidy? Mention at least three types of euploidy.
  - xi. Differentiate between divergent and convergent evolution.
  - xii. What is ecological succession? On the basis of its origin and locality only mention its types.
  - xiii. What basic three types are involved in mechanism of PCR reaction?

**SECTION-C**

**Marks: 27**

**NOTE:** Attempt any three of the following questions. All questions carry equal marks.

2. Define osmoregulation. How fresh water and marine animals can do osmoregulation?
3. What is joint? Mention different types of joints.
4. Analyze the phenomenon of feedback mechanism by taking an appropriate example from chemical coordination.
5.
  - i. What is habituation?
  - ii. Explain complete dominance phenomenon.