

PAPER VI

GENERAL SCIENCE, ENVIRONMENT AND TECHNOLOGY DEVELOPMENT

Full Marks: 200

Time : 3 Hours

INSTRUCTION:

- i. Candidates are required to answer **all** questions.
- ii. Question number **1 (one)** is **compulsory** and is of objective type.
- iii. Question number **1 has 20** questions carrying **2 marks** each.
- iv. Question number **2 to 6** are of descriptive nature and answer should not exceed 500-600 words.
- v. Question number **2 to 6** are of equal value carrying **32 marks (thirty two)** marks each.

1. Choose the correct answer in each of the following objective questions. (20x2=40)
- I. Sound of frequency below 20 Hz are called
 - (a) Audio sounds
 - (b) Infrasonics
 - (c) Ultrasonics
 - (d) Supersonics
 - II. A body is lifted from the ground onto a table by you. The amount of work performed in the process not depends upon
 - (a) The path along which you lifted the body
 - (b) The time taken by you in the process
 - (c) The weight of the body
 - (d) Your own weight
 - III. The orbit of revolution of the earth around the sun is
 - (a) Circular
 - (b) Elliptical
 - (c) Parabolic
 - (d) Hyperbolic
 - IV. When a conservative force does positive work on a body, its potential energy
 - (a) Increases
 - (b) Decreases
 - (c) Remains unaltered
 - (d) Fluctuates
 - V. Father of Genetics is
 - (a) Mendel
 - (b) Morgan
 - (c) Muller
 - (d) Hugo de Vries
 - VI. Stages in proper sequence of Prophase I are
 - (a) Zygotene, Leptotene, Pachyteene, Diakinesis, Diplotene
 - (b) Leptotene, Zygotene, Pachyteene, Diplotene, Diakinesis
 - (c) Leptotene, Pachyteene, Zygotene, Diakinesis, Diplotene
 - (d) Diplotene, Diakinesis, Pachyteene, Zygotene, Leptotene
 - VII. Hemophilia is
 - (a) An infectious disease
 - (b) Sex linked disease

- (c) Caused by malnutrition
(d) None of the above
- VIII. The organelles called as “power house” of the cell are
(a) Golgi apparatus
(b) Ribosomes
(c) Mitochondria
(d) Lysosomes
- IX. The major nutrients for plants are
(a) Fe, Mn, Zn
(b) N, P, K
(c) Cu, Mo, B
(d) Co, Cl, Na
- X. The uses of Neem tree
(a) Timber
(b) Medicinal
(c) Fertilizer
(d) All of the above
- XI. Food-grain includes the following crops
(a) Cereals and Pulses
(b) Cereals and Oil seeds
(c) Cereals, Pulses and Oil seeds
(d) Cereals, Pulses, Oil seeds and Spices
- XII. As per Planning Commission Report (1989) on Agroclimatic zone of India, Jharkhand comes under
(a) Central Plateau and hill region
(b) Western Plateau and hill region
(c) Eastern Plateau and hill region
(d) Trans Gangatic plain region
- XIII. Which four components constitute an ecosystem?
(a) Water, Carbon, Oxygen, Sulphur
(b) Soil, Temperature, Humidity, Rainfall
(c) Abiotic materials, Producers, Consumers, Decomposers
(d) Herbivores, Carnivores, Bacteria, Parasites
- XIV. The advantage of implementing rain water harvesting is
(a) It recharges ground water levels
(b) It reduces run-off
(c) It avoids flooding
(d) All the above
- XV. Sardar Sarovar Project is built on
(a) Sone river
(b) Tapti river
(c) Narmada river
(d) None of the above
- XVI. Red data book provides data on
(a) Red flower plants
(b) Red coloured fishes
(c) Red coloured insects
(d) Endangered plants and animals
- XVII. The HIV and AIDS (prevention and Control) Act was implemented in
(a) 2014
(b) 2015
(c) 2016
(d) 2017
- XVIII. GIS deals with which kind of data?

- (a) Numeric data
- (b) Binary data
- (c) Spatial data
- (d) Complex data

XIX. Conventional source of energy is

- (a) Wind energy
- (b) Solar energy
- (c) Coal
- (d) Nuclear energy

XX. Leprosy is caused due to

- (a) Clostridium
- (b) Salmonella
- (c) Mycobacterium
- (d) Bacillus

2. What are infrasonic and ultrasonic sound? Name the source of infrasonic sound in nature. Describe the characteristics and applications of ultrasonic sound. **32**

OR

State Kepler's laws planetary motion. Distinguish between Lunar eclipse and Solar eclipse.

3. What do you understand by sex linked inheritance? Illustrate with suitable examples. **32**

OR

Name four important hormones of pituitary gland. Discuss their functions.

4. What do you mean by Agro-forestry. Describe the importance of Agro-forestry and their management. **32**

OR

Explain in brief the salient features of Pradhan Mantri Phasal Beema Yojna.

5. What is solid waste management? Write causes, effect and control methods of urban and industrial waste. **32**

OR

Explain the evidences and causes of climate change.

6. What is global energy crisis? Give a detailed account of alternative source of energy. **32**

OR

Define cancer. Give an account of various kinds of cancers. Mention a list of carcinogens.