

2014

(3rd Semester)

SCIENCE

(History of Science)

Full Marks : 75

Time : 3 hours

(PART : B—DESCRIPTIVE)

(Marks : 50)

The questions are of equal value

Answer all questions

1. What do you understand by Popperian falsification?

Or

Discuss the Aristotelian-Ptolemaic geocentric model of the universe.

2. Describe the discovery of cell and development of cell theory.

Or

Describe Gregor Mendel's experiments and Mendel's laws.

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(Turn Over)

3. Describe the discovery of penicillin and streptomycin.

Or

Describe the discovery of DNA.

4. What do you mean by Alchemy? Discuss the concept of Philosophers's Stone.

Or

Discuss the contribution of Mendeleev in the development of Periodic Table. How is Mendeleev's periodic table different from the modern periodic table?

5. Describe the contributions of Einstein in the development of Physics.

Or

Describe the works of Wilhelm Röntgen in the field of Radiological Physics.

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(PART : A—OBJECTIVE)

(Marks : 25)

The figures in the margin indicate full marks for the questions

SECTION—A

(Marks : 10)

Put a Tick (✓) mark against the correct answer in the brackets provided : 1×10=10

1. A well-substantiated explanation of natural system that incorporates facts, laws, inferences, observations and tested hypothesis is called

- (a) hypothesis ()
- (b) theory ()
- (c) law ()
- (d) empirical evidence ()

2. Francis Bacon was the creator of philosophical methodology, called

- (a) empiricism ()
- (b) Baconian inductivism ()
- (c) hypothetico-deductivism ()
- (d) None of the above ()

3. The greatest biologist in the Greek world was

- (a) Aristotle ()
- (b) Plato ()
- (c) Galen ()
- (d) Socrates ()

4. Robert Hooke introduced the word 'cell' in his book, titled

- (a) *De humani* ()
- (b) *Micrographia* ()
- (c) *De motu cordis* ()
- (d) *Microscopical Researches* ()

5. Har Gobind Khorana received Nobel Prize in 1968 for his discovery on

- (a) cell cycle ()
- (b) genetic code ()
- (c) RNA ()
- (d) None of the above ()

6. Linus Pauling's most influential chemistry book ever published, is

- (a) *Electron Diffraction* ()
- (b) *Electronegativity* ()
- (c) *Hybridization of Atomic Orbitals* ()
- (d) *The Nature of the Chemical Bond* ()

7. The father of Modern Chemistry is

- (a) John Dalton ()
- (b) Robert Boyle ()
- (c) Avogadro ()
- (d) Aristotle ()

8. Discovery of the role of oxygen in the process of combustion is credited to

- (a) Laurent Lavoisier ()
- (b) Avogadro ()
- (c) Friedrich Wöhler ()
- (d) None of them ()

9. The word 'physics' has been derived from the Greek word 'physis' meaning

- (a) life ()
- (b) universe ()
- (c) nature ()
- (d) earth ()

10. The first Nobel Prize in Physics was awarded in 1901 to

- (a) Wilhelm Röntgen ()
- (b) Neils Bohr ()
- (c) Albert Einstein ()
- (d) Max Planck ()

SECTION—B

(Marks : 15)

Write short notes on the following in 5 to 8 sentences each :

3×5=15

1. Hypothesis

2. Germ theory of diseases

(Marks : 15)

Write short notes on the following in 5 to 8 sentences each :

3x5=15

I. Hypothesis

(a) Koch's postulates

(b) Germ theory

9. The word physics has been derived from the Greek word 'physis' which means nature.

(a) Aristotle

(b) Galileo

(c) Newton

(d) Copernicus

10. The Nobel Prize in Physics was awarded in 1901 to Wilhelm Röntgen.

(a) Wilhelm Röntgen

(b) Marie Curie

(c) Albert Einstein

(d) Max Planck

3. Dalton's atomic theory

4. Avogadro's hypothesis and its consequence

5. Contribution of James Clerk Maxwell

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III/MIL (Sc)