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Your Roll No.

5063

B.Sc. (G)/(Hons.)

B

**HISTORY OF SCIENCE AND SCIENTIFIC
METHOD**

Time : 3 Hours

Maximum Marks : 100

(Write your Roll No. on the top immediately on receipt of this question paper.)

Section A

(Marks : 50)

(Physical Sciences)

Attempt *three* questions only.

Question No. 1 is compulsory.

1. Name the scientist(s) associated with the discovery of the following : 9×2=18

- (i) Neutron
- (ii) Radioactivity
- (iii) $E = mc^2$
- (iv) Atomic structure
- (v) Heliocentric theory
- (vi) Light quanta
- (vii) Expanding Universe
- (viii) Black hole radiation
- (ix) Electro-magnetism.

P.T.O.

2. Give an account of the life and work of any *two* of the following in about **200** words each : 2×8=16
- (a) Isaac Newton
 - (b) S.N. Bose
 - (c) Madam Curie
 - (d) Michael Faraday.
3. Write short notes in about **200** words. Describe any *two* of the following : 2×8=16
- (a) Rutherford's discovery of atomic model.
 - (b) Development of Quantum mechanics.
 - (c) Growth of Alchemy and its role in chemical techniques.
 - (d) Black Holes.
4. Explain, what do you understand by scientific method ? Discuss the role of observation, experimentation, hypothesis and prediction in the evolution of a scientific theory.

Or

- How did the study of chemical reactions lead to the concept of atoms and molecules ? Explain by examples. 16
5. Describe the development of any *two* of the following in about **200** words : 2×8=16
- (a) Kinetic theory of gases.
 - (b) Big-bang model of the Universe.
 - (c) Internet and mobile telephony.
 - (d) Atomic Bomb.

Section B

(Marks : 50)

(Biological Sciences)

Attempt *three* questions only.Question No. **I** is compulsory.

I. Match the following :

9×2=18

- | | |
|------------------------|-----------------------------------|
| (i) Ivan Pavlov | (a) Crescograph |
| (ii) Robert Brown | (b) One enzyme one gene theory |
| (iii) J.C. Bose | (c) Reflex action |
| (iv) Jenner Edward | (d) Exchange of gases in plants |
| (v) Beedle & Tatum | (e) Blood group |
| (vi) Landsteiner | (f) Vaccination against small-pox |
| (vii) Joseph Priestley | (g) Nucleus |
| (viii) Rudolph Virchow | (h) Cellular theory |
| (ix) Wilhelm Roux | (i) Bacteriologist. |

2. Write an account of life and work of any *four* of the following : 4×4=16
- (i) Leeuwenhoek
 - (ii) Alexander Fleming
 - (iii) Galen
 - (iv) Louis Pasteur
 - (v) Hargobind Khurana
 - (vi) Andreas Vesalius
 - (vii) Robert Koch.
3. Write short notes on any *two* of the following : 2×8=16
- (i) Cell theory
 - (ii) Germ theory of diseases
 - (iii) Histological Background of Photosynthesis
 - (iv) Cell organelles in animals.
4. (a) Write about life of Mendel and explain its contribution towards theory of hereditary. 8
- (b) Explain William Harvey's theory of Blood circulation. 8
5. Describe the life history of Charles Darwin. What is his contribution towards theory of Natural Selection for origin of species. 16