Roll No. | | | | | | |

Answer Sheet No._____

Sig. of Candidate._____

Sig. of Invigilator._____

RADIOGRAPHIC TECHNIQUES HSSC–I

SECTION – A (Marks 20)

Time allowed: 25 Minutes

NOTE: Section–A is compulsory and comprises pages 1-2. All parts of this section are to be answered on the question paper itself. It should be completed in the first 25 minutes and handed over to the Centre Superintendent. Deleting/overwriting is not allowed. Do not use lead pencil.

Q. 1 Circle the correct option i.e. A / B / C / D. Each part carries one mark.

(i) Nucleus is positive due to the presence of _____

A. Electron B. Proton

C. Neutron D. None of these

(ii) Which of the following laws explains the relation among length, area and resistivity?

A. Ohm's Law B. Coulomb's Law

C. Resistance Law D. Faraday's Law

(iii) Which of the following is found in solid, liquid and gas states?

A. Molecule B. Atom

C. Matter D. All of these

(iv) Which of the following is the unit of Energy?

A. Ampere B. Watt

C. Watt-hour D. Ohm

(v) Which of the following is the working principle of Generator?

A. Ohm's Law B. Coulomb's Law

C. Resistance Law D. Faraday's Law

(vi) Which of the following is stated as Magnetic effect of electric current?

A. Voltage and current are directly proportional

B. Whenever a conductor cuts lines of force, emf induces in it

C. Whenever current flows through a wire, magnetic is set up around it

D. None of these

(vii) Which the following machines works on Mutual Induction?

A. Generator B. Motor

C. Galvanometer D. Transformer

(viii) Which is called "addition or deletion of an electron from its orbits"?

A. Excitation B. Ionization

C. Energy level D. Electron Volt

(ix) Which of the following circuits has total resistance less than minimum resistance in the circuit?

A. Series Circuit B. Parallel Circuit

C. Series-Parallel Circuit D. Testing Circuit

(x) Which of the following is used as testing circuit?

A. Series Circuit B. Parallel Circuit

C. Series-Parallel Circuit D. Testing Circuit

(xi) What is called, "the rate of doing work"?

A. Power B. Energy

C. Ampere D. Potential Difference

DO NOT WRITE ANYTHING HERE

(xii) Which of the following is the definition of Potential?

A. Flow of electron

B. Work done on an electron to bring it from infinity to a point

C. Work done on an electron to bring it from one point to another point

D. None of these

(xiii) Which of the following is the definition of Potential Difference?

A. Flow of electron

B. Work done on an electron to bring it from infinity to a point

C. Work done on an electron to bring it from one point to another point

D. None of these

(xiv) Which separates 0.1118 gram of silver from silver nitrate solution is called_____

A. Volt B. Watt

C. Ampere D. Ohm

(xv) Which of the following is the unit of Frequency?

A. Revolution per minute B. Number of cycles per second

C. Time required for completing one cycle D. None of these

(xvi) Which of the following is the definition of Time Period?

A. Revolution per minute B. Number of cycles per second

C. Time required for completing one cycle D. None of these

(xvii) What is RAD?

A. Unit for Radiation emitted by X-Ray Machine

B. Unit for Radiation absorbed by Patient

C. Unit for Radiation absorbed by Worker

D. Unit for Radiation which goes into waste

(xviii) Which of the following films is used for adult chest X-Ray?

A. 14 x 14 B. 14 x 17

C. 12 x 15 D. 10 x 12

(xix) Which of the following chemicals is a by-product after developing film?

A. Gold B. Aluminium

C. Silver D. None of these

(xx) Who invented the X-Ray machine?

A. Mr. Hertz B. Mr. Ampere

C. Mr. Faraday D. Mr. Roentgen

For Examiner's use only:

Total Marks: 20

Marks Obtained:

RADIOGRAPHIC TECHNIQUES HSSC–I

Time allowed: 2:35 Hours **Total Marks Sections B and C: 80**

NOTE: Answer any ten parts from Section 'B' and any three questions from Section 'C' on the separately provided answer book. Use supplementary answer sheet i.e. Sheet–B if required. Write your answers neatly and legibly.

SECTION – B (Marks 50)

Q. 2 Attempt any TEN parts. The answer to each part should not exceed 2 to 4 lines. **(10 x 5 = 50)**

(i) What is Matter?

(ii) What is Power?

(iii) What is Energy?

(iv) What is Ampere?

(v) What is Coulomb's Law?

(vi) What do you know about the Laws of Resistance?

(vii) How will you calculate total resistance of 4, 5, 6 ohm in parallel?

(viii) What is Current if a heater has 500 ohm resistance and is connected across 220 volts?

(ix) What is the resistance of a wire having 1000 metre length, 10 sq. millimetre area and 0.0072 m-ohm specific resistance?

(x) What is Motor effect of current?

(xi) What is the Magnetic effect of current?

(xii) Why is the Series circuit used?

(xiii) Why is a Parallel circuit commonly used?

(xiv) What is the role of current and voltage in working of an X-Ray Machine?

(xv) What are the most common films used in an X-Ray department?

SECTION – C (Marks 30)

Note: Attempt any THREE questions. All questions carry equal marks. **(3 x 10 = 30)**

Q. 3 Explain Ionization and Excitation.

Q. 4 Explain the working of a Transformer.

Q. 5 Describe cardinal principle of Radiation Protection.

Q. 6 How does a high tension generator work?

Q. 7 Define Faraday's law of electromagnetic induction.