Dr.B.R.Ambedkar Open University

M.Sc Second Year – PHYSICS (2020-2022)

Course V: Nuclear Physics & Analytical Techniques

ASSIGNMENT-I

Maximum Marks: 15
Minimum marks: 06

Section-A

(Marks:10)

I. Answer any **one** of the following questions in about 30 lines

1. Explain the Gammov's theory of Alfa-decay
2. Define Q-value of a nuclear reaction and derive Q-equation.

Section-B

(Marks: 05)

II.Answer any **one** of the following questions in about 10 lines

1.Discuss the theory of photo electric effect.

2. Derive the four-factor in a neutron cycle.

Dr.B.R.Ambedkar Open University

M.Sc Second Year – PHYSICS (2020-2022)

Course V: Nuclear Physics & Analytical Techniques

ASSIGNMENT-II

Maximum Marks: 15
Minimum marks: 06

Section-A

(Marks :10)

I. Answer any **one** of the following questions in about 30 lines

1. Discuss the theory of NQR and explain working of a NQR spectrometer.
2. Derive Bloch equations and explain their significance.

Section-B

(Marks :05)

II. Answer any **one** of the following questions in about 10 lines

1. Write the differences between ESR and NMR.
2. Explain the fundamental interactions in nature.

Dr..B.R.Ambedkar Open University

M.Sc Second Year – PHYSICS (2020-2022)

Course VI: Electromagnetic Theory and Spectroscopy

ASSIGNMENT-I

Maximum Marks: 15
Minimum marks: 06

Section-A

(Marks:10)

I. Answer any **one** of the following questions in about 30 lines.

1. State and explain Brewster's law. Mention its application in Polaroid.
2. Explain the magnetic effects of orbital and spin nature of electron.

Section-B

(Marks :05)

II.Answer any **one** of the following questions in about 10 lines

1. Describe vector atom model.

2. Describe the IR double beam spectroscopy.

Dr.B.R.Ambedkar Open University

M.Sc Second Year – PHYSICS (2020-2022)

Course VI: Electromagnetic Theory and Spectroscopy

ASSIGNMENT-II

Maximum Marks: 15
Minimum marks: 06

Section-A

(Marks:10)

I.Answer any **one** of the following questions in about 30 lines.

1. Distinguish between Rotational and Vibrational Raman spectra.
2. Describe classical and quantum theory of Raman Effect. How is Raman scattered light polarized

Section-B

(Marks:05)

II.Answer any **one** of the following questions in about 10 lines

1. Explain magnetic dipole radiation.
2. What is hyperfine splitting of Spectra?

Dr.B.R.Ambedkar Open University

M.Sc Second Year – PHYSICS (2020-2022)

Course VII: Memory Devices and Microprocessors

ASSIGNMENT-I

Maximum Marks: 15
Minimum marks: 06

Section-A

(Marks:10)

I. Answer any **one** of the following questions in about 30 lines.

1. What are the various status flags in 8085 microprocessor? Explain the functions of the flags
2. Explain the importance of logic gates.

Section-B

(Marks:05)

II. Answer any **one** of the following questions in about 10 lines.

1. Write an ALP to move a block of data.
2. Explain the flag register of 80286 processor.

Dr.B.R.Ambedkar Open University

M.Sc Second Year – PHYSICS (2020-2022)

Course VII: Memory Devices and Microprocessors

ASSIGNMENT-II

Maximum Marks: 15
Minimum marks: 06

Section-A

(Marks:10)

I. Answer any **one** of the following questions in about 30 lines

1. Explain the architecture of Pentium processor.
2. What is ROM? Mention the different types of ROM and their characteristics.

Section-B

(Marks :05)

II.Answer any **one** of the following questions in about 10 lines

1. Explain control instructions of 8085.
2. Discuss in the importance and working of various CMOS technologies.

Dr.B.R.Ambedkar Open University

M.Sc Second Year – PHYSICS (2020-2022)

Course VIII: Microwave Devices and Communication Systems

ASSIGNMENT-I

Maximum Marks: 15
Minimum marks: 06

Section-A

(Marks:10)

I. Answer any **one** of the following questions in about 30 lines

1. State and prove the antenna theorem
2. Explain the operation of slop detector with the of suitable diagram

Section-B

(Marks:05)

II. Answer any **one** of the following questions in about 10 lines

1. Write S-matrix for a 2-port junction.
2. Explains the process of avalanche multiplication.

.

Dr.B.R.Ambedkar Open University

M.Sc Second Year – PHYSICS (2020-2022)

Course VIII: Microwave Devices and Communication Systems

ASSIGNMENT-II

Maximum Marks: 15
Minimum marks: 06

Section-A

(Marks:10)

I. Answer any **one** of the following questions in about 30 lines

1. Explain the operating principle and construction of TRAPATI diodes.

2. Explain the working of MTI radar units with the help of a block diagram.

Section-B

(Marks:05)

II. Answer any **one** of the following questions in about 10 lines

1. Explain parametrix up/down converter.
2. Compare amplitude and frequency modulation.