SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH

(A DEEMED TO BE UNIVERSITY)

B.Sc. Allied Health Sciences Second Year Semester-IV (CBCS Scheme)

August – 2018 Examination

B.Sc. Radiotherapy Technology (RTT)

Time: 3 Hrs. **Paper – I** **[Max. Marks: 100]**

Applied Anatomy & Pathology

Your answers should be specific to the questions asked.
Draw neat labelled diagrams wherever necessary.

(Use separate answer booklet for Section A & B)

Section – A

Applied Anatomy (50 Marks)

Q.P Code : RTT401CC

LONG ESSAY **2 X 10 = 20 Marks**

1. Draw the diagram of a human cell and name the parts, briefly describe them.
2. Draw the diagram of the digestive tract name the parts and briefly describe.

SHORT ESSAY (**Answer any three)** **3 X 5 = 15 Marks**

3. Discuss the structure of breast tissue.
4. Name the parts of the internal structure of the kidney and discuss the function.
5. Describe the structure of lung and what is Broncho-pulmonary segment?
6. Describe location, structure and functions of pharynx.
7. Describe the structure of skin. Explain the principal function of the skin.

SHORT ANSWERS (Answer any five) **5 X 3 = 15 Marks**

8. Mention six organs and structures present in the pelvic cavity.
9. Describe the parts of large intestine.
10. Mention the parts of cardiovascular system.
11. Name the major salivary glands and describe its function.
12. Phase of menstruation.
13. List the functions of liver.
14. Name the coverings of brain.

Section – B

Applied Pathology (50 Marks)

Q.P Code : RTT402CC

(Use separate answer booklet for Section-B)

LONG ESSAY **2 X 10 = 20 Marks**

1. Enumerate the pathological classification of lung tumors. Discuss in detail about squamous cell carcinoma of lung.
2. Mention the predisposing conditions of carcinoma breast. Discuss in brief about breast carcinoma.

SHORT ESSAY (**Answer any three)** **3 X 5 = 15 Marks**

3. List the predisposing factors of endometrial carcinoma.
4. Retinoblastoma.
5. Pathology of nasopharyngeal carcinoma.
6. Pathology of bladder carcinoma.
7. Gross and microscopic appearance in teratoma ovary

SHORT ANSWERS (Answer any five) **5 X 3 = 15 Marks**

8. β-HCG.
9. Define Lymphoma.
10. Prostate specific antigen.
11. Gross appearance of seminoma testis.
12. List three pediatric tumors.
13. Mention three premalignant conditions of skin cancer.
14. List three predisposing factors of carcinoma oesophagus.

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B.Sc. Radiotherapy Technology (RTT)

Time : 3 Hrs. **Paper – II** [Max. Marks : 100]

Radiation safety in Radiotherapy

Q.P Code : RTT403CC

Your answers should be specific to the questions asked.
Draw neat labelled diagrams wherever necessary.

LONG ESSAY **2 X 10 = 20 Marks**

1. Explain the periodic QA tests to be carried out in a Telecobalt machine.
2. Define the role and responsibilities of a radiation technologist.

SHORT ESSAY (**Answer any Ten)** **10X 5 = 50 Marks**

3. Write notes on PDD and TMR.
4. Tissue compensators.
5. Write about multi leaf collimators.
6. Explain front and back pointer with diagram.
7. Tomotherapy.
8. List the properties of any three radioactive sources used in radiotherapy and its applications.
9. Discuss briefly the interaction of charged particles.
10. Gamma zone monitor.
11. Emergency procedure for source stuck.
12. ALARA.
13. Safety and security of radiation sources.
14. Responsibilities of licensee.

SHORT ANSWERS (Answer any Ten) **10 X 3 = 30 Marks**

15. Bolus.
16. T-rod.
17. Laser alignment check.
18. Survey meter.
19. Emergency situation in brachytherapy.
20. Monthly checks in a linear accelerator.
21. Time, distance and shielding.
22. Isodose curves.
23. Beam On and Off mechanism in cobalt 60.
24. SRS and SRT.
25. TAR and Dmax.
26. What is Skin Sparing Effect.

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August – 2018 Examination

B.Sc. Radiotherapy Technology (RTT)

Time : 3 Hrs. **Paper – III** [Max. Marks : 100]

Radiation Biology and Principles of Radiotherapy

Q.P Code : RTT404CC

Your answers should be specific to the questions asked.
Draw neat labelled diagrams wherever necessary.

LONG ESSAY **2 X 10 = 20 Marks**

1. Dose response relationship for normal tissue with neat graph and define oxygen enhancement ratio.
2. Acute and late effects of radiation therapy in various organs.

SHORT ESSAY (**Answer any Ten)** **10X 5 = 50 Marks**

3. Clinical signs and symptoms of neoplasia.
4. Chromosomal aberration.
5. DNA strand breaks.
6. Cell survival curve.
7. Time, dose and fractionation.
8. Brachytherapy rationale technique and treatment delivery.
9. Prevention and treatment of skin reactions during radiotherapy.
10. Catractogenisis.
11. EBRT – explain the rationale preparation of patient and technique in H and N malignances.
12. Multidisciplinary approach to management of cancer –explain with two examples.
13. Prevention and treatment of skin reactions during radiotherapy.
14. Radiation protection.

SHORT ANSWERS (Answer any Ten) **10 X 3 = 30 Marks**

15. Mention any three late effects of radiation.
16. Mention side effects of chemotherapy.
17. What is cancer? Explain in briefly.
18. Define Linear Energy Transfer (LET) with unit.
19. TNM Staging.
20. Define the Relative Biological Effectiveness (RBE).
21. What are the complications that occur during treatment of ca. cervix.
22. Name any three techniques of EBRT and explain very briefly.
23. Mention the radiation tolerance limits of heart, lungs and esophagus.
24. Care during sedation/anesthesia.
25. Mention three types of gynecological brachytherapy and explain its briefly.
26. What is mutation?

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