SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH

(A DEEMED TO BE UNIVERSITY)

B.Sc. Allied Health Sciences Second Year Semester-IV

July/August 2019 Examination

B.Sc. Radiotherapy Technology

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 : J4585

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

1. Describe the left lung with respect to
   a) Gross features b) Visceral relations c) Applied anatomy (4+4+2)
2. Discuss the pancreas under following headings
   a) Parts b) Duct system c) microscopic picture d) Applied anatomy (2+3+3+2)

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

3. Describe the relation and interior of 2nd part of duodenum.
4. Mention the location, parts and blood supply of left kidney
5. Mention the relations of inferior surface of liver
6. Describe location, structure and functions of pharynx.
7. Describe the axillary group of lymph nodes.

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

8. Describe the parts of large intestine.
9. Name the cell organelles
10. What are the components of the cortex & medulla of the kidney
11. Name the major salivary glands and describe its function.
12. Name the structures related to visceral surface of spleen
13. Internal trigone of urinary bladder.
14. Name the lobes of prostate gland

Section – B

Applied Pathology (50 Marks)

Q.P Code : J4586

(Use separate answer booklet for Section-B)

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

1. Classify and describe the etiopathogenesis, morphology, clinical course, spread and complications of Breast carcinoma.
2. Classify and describe the etiopathogenesis, morphology, clinical course, spread and complications of Lung cancer.

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

3. Describe the etiopathogenesis, morphology, clinical course, spread and complications of Malignant Melanoma.
4. Classify Ovarian tumors.
5. Describe the etiopathogenesis, morphology and clinical course of Colon carcinoma.
6. Classify thyroid cancers.
7. Describe the etiopathogenesis and morphology of prostate cancer.

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

8. Pap smear.
9. Describe the microscopy of Seminoma.
10. Name 03 types of CNS tumors.
11. Etiopathogenesis of bladder cancer.
12. List 03 testicular tumors.
13. List 03 benign tumors.
14. Etiopathogenesis of gastric carcinoma.

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B.Sc. Radiotherapy Technology

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

Radiation Safety in radiotherapy

Q.P Code: J4590

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

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

1. Discuss about TLD dosimeter, Its working principle and state rules for proper use of TLD badges.
2. Explain the periodic QA tests to be carried out in Telecobalt.

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

3. Explain about shielding blocks used in radiotherapy and its material.
4. What are the radioisotopes used in radiotherapy and write properties of any two isotopes.
5. Explain about the parts of simulator.
6. Write about the properties and uses of californium and iodine 125.
7. Briefly about TMR and TPR.
8. What are the types of beam modification devices are available.
9. Draw a layout of linear accelerator and mention the parameters used for shielding.
10. Define QA and what are daily , monthly and annual check parameters with tolerance in linac?
11. Write about the external radiation protection principle.
12. Write about the properties of radium and iridium source.
13. Radiation protection survey of diagnostic x-ray equipment.
14. Write about the emergency response if telecobalt source is stuck in ON position.

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

15. Define HVT and TVT.
16. What are the different types of survey meter is available?
17. Responsibility of licensee?
18. Gamma zone monitor.
19. QA test – wipe test for brachytherapy.
20. What are the daily and monthly checks done in simulator?
21. Explain about port film.
22. What are the different types of brachytherapy based on the dose rate ?
23. Define PDD . what are parameters it depends on?
24. Write about magnetron in linear accelerator.
25. Properties of tungsten and its uses.
26. Physics of photon.

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B.Sc. Allied Health Sciences Second Year Semester-IV

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B.Sc. Radiotherapy Technology

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

Radiation Biology and principles of Radiotherapy

Q.P Code: J4600

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 physics and chemistry of radiation absorption.
2. Explain the Multidisciplinary management of cancer. Write in brief about Radiotherapy, chemotherapy and Surgery for the treatment of cancer.

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

3. Explain Accelerated fractionation, its advantages and disadvantages.
4. Define Relative biological effectiveness(RBE) & write about RBE of various types of radiation
5. Clinical signs and symptoms of Cancer
6. Time, dose and fractionation.
7. What is Holthusen's curve & Therapeutic ratio?
8. Acute effects of Total body radiation
9. Principles of care and assistance during Sedation/anaesthesia
10. Brachytherapy rationale technique and treatment delivery.
11. Effect of Radiation on Embryo and foetus.
12. Concomitant boost radiotherapy
13. Rationale for Concurrent chemo-radiation
14. DNA repair genes, explain their role in development of cancer

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

15. Explain re-assortment and its importance.
16. Types of Radiation induced DNA damage-define them
17. Name 3 late side effects of Radiotherapy to head and neck
18. Name 6 important Side effects of Chemotherapy
19. Linear energy transfer - explain.
20. Name the 3 staging systems commonly used for cancer
21. Name any three techniques of EBRT and explain very briefly.
22. Name 3 acute side effects of Radiotherapy to Head and neck and their treatment.
23. Electromagnetic radiation.
24. Explain re-oxygenation.
25. 3 differences between conventional and conformal RT.
26. Mention the radiation tolerance limits of heart, lungs and esophagus.

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