

III B.Tech I Semester Regular Examinations, November 2006

BASIC CLINICAL SCIENCES-II

(Bio-Medical Engineering)

Time: 3 hours

Max Marks: 80

**Answer any FIVE Questions
All Questions carry equal marks**

1. (a) List the equipment used in pathology and blood bank departments of a major teaching hospital? [10]
(b) Write a note on reduction replacements? [6]
2. (a) Explain the applications of gas laws in anesthesia. [8]
(b) Distinguish between Teletherapy and Brachytherapy. [8]
3. Describe the mechanism of gas exchange and enumerate the indications for artificial respiration? [16]
4. Write short notes on : [8x2=16]
(a) Oxygen effect
(b) Cell Survival Theory
5. (a) Discuss common genetic effects of radiation and explain how radiation affects the embryo. [8]
(b) Explain about radiation carcinogenesis. [8]
6. Describe in detail the various methods involved in Radiation dosimetry. [16]
7. Describe the procedure used to determine the functioning of Thyroid? [16]
8. (a) Describe briefly the determination of distribution of radioactive material within the body? [8]
(b) Write a note on Malignant natural pleural effusion and ascites? [8]

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1. (a) What is blood pathology and how is it investigated. [8]
(b) What is reduction? Discuss the differences between open and closed Reductions. [8]
2. (a) Discuss the concept of general anesthesia. [8]
(b) What are the precautions to be observed while handling anesthetic gases? [8]
3. (a) Describe with a sketch the operation theatre environment? [8]
(b) Write short notes on intravascular pressure? [8]
4. (a) Explain the tissue classification based on radio sensitivity in radiation therapy. What is oxygen effect ? [8]
(b) Give brief explanation on normal Tissue tolerance dose in radiation therapy cell survival theory ? [8]
5. Explain radiation carcinogenesis and leukemogenesis ? [16]
6. Discuss the various radiation protection measures ? [16]
7. Explain the techniques of imaging the cardiovascular system ? [16]
8. (a) List the radio isotopes used in various therapeutic diseases? [8]
(b) Explain about Radio immuno assay? [8]

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1. (a) Discuss broad principles suitable for treatment of common fractures. [8]
(b) What are the complications of fracture healing discuss the prevention and treatment of bone infections. [8]
2. (a) Discuss the concept of general anesthesia. [8]
(b) What are the precautions to be observed while handling anesthetic gases? [8]
3. (a) Explain about different illumination setups inside the operation theatre? [10]
(b) Write short notes on artificial respiration? [6]
4. (a) Explain the principles involved in radiotherapy ? [8]
(b) Explain the different radiotherapy techniques ? [8]
5. (a) Discuss common genetic effects of radiation and explain how radiation affects the embryo. [8]
(b) Explain about radiation carcinogenesis. [8]
6. (a) Describe the protection measures taken in a hospital during radiation dosage and therapy? [8]
(b) Explain the permissible exposures to radiation and its hazards. [8]
7. (a) Explain the imaging procedures used to study the human respiratory system? [10]
(b) Write a note on Body spaces? [6]
8. (a) What are the different radio-isotopes used in Nuclear Medicine. Explain about the characteristics of each? [8]
(b) What are the therapeutic uses of radio isotopes? [8]

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1. (a) Describe in detail about blood transfusion. [8]
(b) Discuss about the tests performed before blood transfusion. [8]
2. (a) Explain how anesthetic gases are useful during surgery. [8]
(b) Discuss the monitoring of critical parameters of the patient during surgery. [8]
3. (a) Explain the techniques used to monitor the humidity and temperature in a hospital environment. [8]
(b) How do you organize an operation theatre? [8]
4. (a) What are the various factors of irradiation which affect cellular response. [8]
(b) Explain about Oxygen effect and Relative Biological Effectiveness. [8]
5. (a) Classify tumors and explain about carcinogenesis ? [10]
(b) Write about biomedical modifiers ? [6]
6. Explain in details the effects of radiation exposure on various parts of human body and various protective measures taken corresponding to each effect? [16]
7. (a) Discuss nuclear Medical imaging of Skeletal system? [8]
(b) What are the labeled pharmaceuticals used for brain scanning. what are the clinical situations where nuclear medicine has an edge in diagnosis? [8]
8. (a) Discuss the use of Radio-isotopes in medicine? [8]
(b) Explain the features of Radioisotopes used for scanning of liver? [8]
