

**III B.Tech. I Semester Supplementary Examinations, April/May -2005**  
**BASIC CLINICAL SCIENCES-II**  
**(Bio-Medical Engineering)**

**Time: 3 hours**

**Max Marks: 80**

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

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1. Give an account of any four tests done in a pathology lab.
2. (a) What are the different types of anaesthesia administered to the patients?  
(b) Describe the properties of anaesthetic gases.
3. (a) Explain in detail the technique of impedance plethysmography.  
(b) Write about the equipments used in CSSD.
4. Explain the various modes of cancer therapy.
5. (a) What are the normal tissue tolerance doses.  
(b) Discuss the possible risks due to over exposure to radiation.
6. Explain radiation carcinogenesis and Leukaemogenesis.
7. (a) Explain how the radiation distribution in the body is determined.  
(b) Explain the features of radio isotopes used for liver scan.
8. Write short notes on:
  - (a) Thyroid function tests
  - (b) Renal function tests.

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1. (a) Explain in detail about a ball and socket joint. Give examples.  
(b) Write a brief note on blood transfusion.
2. (a) Explain the functions of the various anaesthetic gases.  
(b) What are gas laws? Give the pin index and colour of the cylinders of various gases?
3. (a) Explain the techniques used to monitor the respiration and temperature of a patient undergoing surgery.  
(b) How do you organize an operation theatre?
4. (a) Discuss the various approaches used in cancer therapy.  
(b) Explain the terms radio resistivity and radio sensitivity of tumors.
5. (a) Explain the modification of radiation response by different modifiers.  
(b) Write short notes on radiation dosimetry.
6. (a) What spectrum of radiation energy can induce cataract. How can it be prevented?  
(b) Write about radiation and skin damage.
7. Explain the techniques of imaging the cardio vascular system.
8. (a) What are the different radio-isotopes used in nuclear medicine. Explain about the characteristics of each.  
(b) What are the therapeutic uses of radio isotopes?

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1. (a) Classify joints. Explain about the degree of movement at each type of joint.  
(b) Discuss about blood groups.
2. (a) Discuss the properties of different anaesthetic gases.  
(b) Explain the precautions to be observed while handling anaesthetic gases.
3. (a) Discuss the significance of humidity and temperature measurements in artificial respiration.  
(b) Explain the techniques of measurement of intra vascular pressures.
4. (a) Discuss the application of radio isotopes in radiotherapy?  
(b) What are the indications for chemotherapy?
5. (a) Explain in detail about physical, chemical and biomedical modifiers.  
(b) Explain about the measures to be taken for protection from radiation.
6. (a) What are possible genetic effects of radiation?  
(b) Discuss the effects of radiation on blood and blood forming organs.
7. (a) What are the labeled pharmaceuticals used for brain scanning. What are the clinical situations where nuclear medicine has an edge in diagnosis.  
(b) Discuss about nuclear medical imaging of skeletal system.
8. Write a short note on:  
(a) The use of radio-isotopes in medicine  
(b) Polycythemia.

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1. (a) What are the indications for joint replacements?  
(b) Explain the procedure used for blood grouping, giving an account of different blood groups.
2. (a) Explain how anaesthetic gases are useful during surgery.  
(b) Discuss the monitoring of critical parameters of the patient during surgery.
3. (a) Derive the expression which relates the change in impedance to blood flow.  
(b) Explain the diagnostic and therapeutic indications of artificial respiration.
4. (a) Based on the cell radio sensitivity, classify tumors.  
(b) Explain cell survival theory and oxygen effect.
5. (a) Write a short note on normal tissue tolerance dose in radiation therapy.  
(b) How are the units of measuring radiation exposure and what procedures are adopted to arrive at permissible levels.
6. (a) Write about LD50 studies.  
(b) What is radiation carcinogenesis. What are the common cancers due to radiation hazards.
7. (a) Explain about the distribution of radioactive material within the body.  
(b) Explain about the imaging procedures of the cardiovascular system.
8. (a) What are the various renal function tests?  
(b) Write about Radio immuno assay?

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