

Code No: 09A51103

R09

SET-1

B. Tech III Year I Semester Examinations, December-2011
BASIC CLINICAL SCIENCES - II
(BIO-MEDICAL ENGINEERING)

Time: 3 hours

Max. Marks: 75

Answer any five questions
All questions carry equal marks

1. Define orthopedics. Write in detail about different types of joints with suitable examples and the movements at these joints. [15]
2. Discuss the requirements in setting up a blood bank. Describe types of blood groups and their significance. [15]
3. Define Anesthesia and classify general anesthetics. Discuss the various laws of gases and uptake of gases and vapors. [15]
4. Describe plethysmography and its applications in medicine. [15]
5. Discuss the principles of Radiotherapy, radio resistance and modification of radiation response. [15]
6. Write the effects of radiation on blood and blood forming organs and their treatment. Add a note on radioactive protection. [15]
7. Enlist the types of organ imaging procedures. Write in detail about the principle and instrumentation involved in any one of them. [15]
8. Mention the therapeutic uses of radio isotopes. Describe their application in the diagnosis of thyroid and renal functioning. [15]

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SET-2

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BASIC CLINICAL SCIENCES - II
(BIO-MEDICAL ENGINEERING)

Time: 3 hours

Max. Marks: 75

Answer any five questions
All questions carry equal marks

1. Classify joints with suitable examples. Write in detail about prosthetics for knee replacement. [15]
2. Write about storage conditions required for various blood products and how they are maintained in a blood bank. Discuss about blood transfusion. [15]
3. Describe the organization of an operation theatre and add a note on pre-anesthetic medication and care. [15]
- 4.a) Discuss the non-invasive techniques of measuring intravascular blood flow and their significance.
b) Describe a ventilator and its applications. [7+8]
5. Write in detail about cancer radiotherapy, radio sensitivity and radio response. [15]
6. Describe radiation induced carcinogenesis, its diagnosis, treatment and prevention. [15]
7. Describe the various imaging procedures for testing the morphological changes and functioning of brain. [15]
8. Write a short note on
a) Radioimmunoassay
b) Tests for functioning of thyroid and kidneys. [15]

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SET-3

B. Tech III Year I Semester Examinations, December-2011
BASIC CLINICAL SCIENCES - II
(BIO-MEDICAL ENGINEERING)

Time: 3 hours

Max. Marks: 75

Answer any five questions
All questions carry equal marks

1. Describe the structure of knee joint and its replacement procedure. [15]
2. Write in detail about different blood groups, their testing and significance. [15]
3. Describe the care and monitoring before, after and during surgery of a patient. [15]
4. Describe in detail about a ventilator, its functioning and therapeutic indications. [15]
5. Describe the following:
 - a) Radio sensitivity and radio resistance
 - b) Modification of radiation response [15]
6. Discuss the genetic effects of exposure to radiation and describe the techniques involved in measuring radiation levels. [15]
7. Define nuclear medicine. Discuss the principle involved and equipment used in the imaging of respiratory system. [15]
8. Enlist the therapeutic uses of radio isotopes and discuss in detail about radioimmunoassay and thyroid function tests. [15]

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SET-4

B. Tech III Year I Semester Examinations, December-2011
BASIC CLINICAL SCIENCES - II
(BIO-MEDICAL ENGINEERING)

Time: 3 hours

Max. Marks: 75

Answer any five questions
All questions carry equal marks

1. Describe the types of prosthetics used in joint replacement surgeries. [15]
2. Write a detailed note on
 - a) Blood banks
 - b) Blood groups. [15]
3. Discuss the organization of operation theatres and add a note on patient monitoring during surgeries. [15]
4. Describe the mechanism of respiration and gaseous exchange in tissues and add a note on significance of humidity and temperature measurements. [15]
5. Write in detail about cancer radiotherapy and radio curability of tumors. [15]
6. Define LD₅₀. Discuss the hazards of radiation on embryo and add a note on medical tests used for diagnosing radiation exposure. [15]
7. How do you determine the distribution of radioactive substances within the body? Discuss the kidney imaging techniques. [15]
8. Briefly discuss the various therapeutic uses of radio isotopes. [15]

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