

**III B.Tech. II Semester Regular Examinations, April/May -2005  
ADVANCED BIOMEDICAL EQUIPMENT  
(Bio-Medical Engineering)**

**Time: 3 hours**

**Max Marks: 80**

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

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1. (a) How computers are useful in clinical laboratories explain?  
(b) List the applications of computer in intensive care units?
2. Explain the principle of Bekesy audiometer.
3. Write a short note on:
  - (a) Microphones
  - (b) receivers and
  - (c) Amplifiers
4. (a) Define Organ, Artificial Organ.  
(b) Suggest few Artificial organs.
5. Does Artificial Hand functions same as that of an Ordinary Hand? If not, give Reasons. Draw suitable sketches also.
6. (a) Mention different types of Mechanical and Tissue Valves.  
(b) Sketch any one type of Prosthetic Heart Valve and label it.
7. Describe the general scheme of operation of Hemodialysis with the help of a suitable block diagram.
8. Distinguish between Pneumatic and Electronic Types of Larynx.

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1. List the online and offline activities of Reservation, admission and discharge module in hospital information system?
2. Draw the block diagram of a basic Audiometer and explain it.
3. Write a short note on:
  - (a) Microphones
  - (b) receivers and
  - (c) Amplifiers
4. (a) Define Organ, Artificial Organ.  
(b) Suggest few Artificial organs.
5. Does Artificial Limb work same as that of an Ordinary Limb? If not, give Reasons? Draw suitable sketches also.
6. How do you Test a ' Prosthetic Heart Valve' using a Pulse Duplicator?
7. Draw the circuit diagram of Conductivity Monitoring of Dialysate and explain.
8. What do you mean by Larynx , Sketch and label it.

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1. Differentiate the applications of computer in administrative and clinical aspects in an hospital?
2. (a) Write a short note on : Audiometry.  
(b) Distinguish between Air, Bone Conductions.
3. Describe working of Hearing Aid.
4. (a) How one can prevent Corrosion?  
(b) Name few materials used in the process of preparing Artificial Organs.
5. Does Artificial Hand functions same as that of an Ordinary Hand? If not, give Reasons. Draw suitable sketches also.
6. (a) Explain the working principle of Pulse Duplicator.  
(b) Under what circumstances we need to test a prosthetic heart valve also suggest suitable precautions to be considered..
7. Draw the diagram of a simple Haemodialyser machine and explain.
8. Write a short note on :
  - (a) Artificial Larynx.
  - (b) What do you mean by Speech?
  - (c) Define Larynx.

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1. (a) Explain how computers are helpful in imaging techniques?  
(b) Mention the applications of computer in pediatrics and obstetrics departments in hospital?
2. Draw the block diagram of a basic Audiometer and explain it.
3. Explain different types and purpose of hearing aid with working principles?
4. (a) Give the necessity of Artificial organs.  
(b) Write a comment on 'Choice of Materials', used in the process of Artificial Organs.
5. Does Artificial Limb work same as that of an Ordinary Limb? If not, give Reasons? Draw suitable sketches also.
6. (a) Mention different types of Mechanical and Tissue Valves.  
(b) Sketch any one type of Prosthetic Heart Valve and label it.
7. Draw the diagram of a simple Haemodialyser machine and explain.
8. How do you analyze Artificial Electronic Larynx Speech?

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