

Student Exam No.....

GANPAT UNIVERSITY

B.Tech VIII sem Biomedical and Instrumentation Engineering

Regular Examination May-June 2012

BME- 804: Prosthetics And Orthotics

Time: 3 Hours

Marks: 70

Instructions:

1. All the questions are compulsory.
2. Answer to the question of each section must write in separate answer books.
3. Figures to the right indicate marks.
4. Assume data, if needed.
5. Conventional terms/notations are used.

SECTION-I

- | | | |
|-----|---|----|
| Q.1 | (a) Describe different types of artificial larynx. | 12 |
| | (b) Write short note on Type of wheelchairs. | |
| | OR | |
| Q.1 | (a) Describe structure of Hip with necessary figures. | 12 |
| | (b) Describe and differentiate path sounder and mowat sensor. | |
| Q.2 | (a) Describe Neville trachea. | 11 |
| | (b) Describe the latest trends in designing of an artificial esophagus | |
| | OR | |
| Q.2 | (a) Write short note on visual augmentation and visual auditory substitution. | 11 |
| | (b) Write short note on intelligent prosthetic knee. | |
| Q.3 | (a) Write short note on hierarchical controlled prosthetic hand. | 12 |
| | (b) What is laryngectomy? explain partial and total laryngectomy | |

SECTION-II

- Q.4 (a) Define following terms: 4
(1) Prosthetics (2) Prosthetists (3) Orthotics (4) Orthotists
- (b) Explain the construction & working of Ball-Cage, tilting-disk and bi-leaflet artificial heart valves. Also describe the risks associated with Mechanical Heart Valves. 8

OR

- Q.4 (a) Briefly Describe the characteristics of material used in prosthetics and orthotics 4
(b) Describe the extracorporeal blood circuit functions and monitoring systems of the hemodialysis machine. 8

- Q.5 (a) Describe the design & working of following types of artificial heart. 8
(1) Jarvik-7 Total Artificial Heart
(2) Abiocoar Artificial Heart
- (b) Which types of pumps are used in Heart-Lung Machine? Explain the working of them. 3

OR

- Q.5 (a) Write short note on : 11
(1) Development and application of Artificial Heart
(2) Complications during Extracorporeal circulation in Heart-Lung Machine

- Q.6 (a) Identify the purpose and characteristics of dialyzers. 8
(b) Enlist and explain the components of Heart-lung Machine. 4

'END OF PAPER'