

GANPAT UNIVERSITY  
B.Tech. Semester VIII (BM&I)  
Regular Examinations May/ June 2013  
BME 804 Prosthetics and Orthotics

Student Exam No:

Time:- 3 Hours

Instructions:

Marks:- 70

1. Answer to the questions must be written in separate answer books.
2. Figure to the right indicate marks.
3. Assume data, if needed.
4. Conventional terms / notations are used.
5. All the questions are compulsory.

SECTION-I

Q.1

- (a) Explain in brief the effective orifice area and pressure gradient of artificial heart valve.
- (b) Explain in detail the use of prosthesis.
- (c) Define the following terms:
  1. Regurgitation
  2. Transfemoral prosthesis
  3. Residual capacity
  4. Disability

[12]

OR

Q.1

- (a) Write a short note on single axis foot.
- (b) Discuss in detail the components of upper extremity prosthesis:

[12]

Q.2

- (a) Write a short note on multi axis foot.
- (b) What is PTB socket? Discuss the design aspects of socket walls.

[11]

OR

Q.2

- (a) Draw and explain the supracondyles suspension mechanism for transtibial prosthesis.
- (b) Draw and explain the internal and external components of cochlear implants prosthesis for deaf.

[11]

Q.3

[12]

- (a) Draw and explain the working, advantages and disadvantages of bionic arm.
- (b) What is RN Palsy? Briefly mention the dynamic splints used for RN Palsy.

SECTION-II

Q.4

[12]

- (a) Write short note on Kidney Structure and functions with necessary figures.
- (b) What is artificial larynx. Write short note on electrolarynx.

OR

Q.4

- (a) Explain in detail basic parts of artificial heart lung machine in detail. [12]
- (b) What is laryngectomy? explain the types of laryngectomy?

Q.5

[11]

- (a) Write short note on artificial kidney.
- (b) What is orthopedic prosthesis? Give examples of orthopedic prosthesis. Explain each function in detail

OR

Q.5

[11]

- (a)
  - 1. Endoskeleton involves
    - A. Covering of skin, hair, nails
    - B. Bones and cartilages
    - C. Bones only
    - D. None of the above.
  - 2. What is a common problem with peritoneal dialysis.
  - 3. Which dietary mineral must be limited for a person on hemodialysis?
  - 4. What is the filter called that functions as an artificial kidney in hemodialysis?
  - 5. In hemodialysis (HD), blood is filtered through a \_\_\_\_\_.
  - 6. In peritoneal dialysis (PD), draining out the dirty fluid and putting in the clean fluid is called:
- (b) Explain cochlear implant in detail

Q.6

[12]

- (a)
  - 1. What is manualism and oralism?
  - 2. What is BAHA?
  - 3. Give the difference between digitally controlled and analogue controlled hearing aids.
- (b)
  - 1. What is hemoperfusion?
  - 2. What is assistive technology?