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MANIPAL INSTITUTE OF TECHNOLOGY
(A Constituent Institute of – Manipal University)
Manipal – 576 104



II SEMESTER M.Tech (BME) DEGREE END-SEMESTER EXAMINATIONS, MAY- 2016.

SUBJECT: ALLIED HEALTH SCIENCES (BME 504)
(REVISED CREDIT SYSTEM)

Saturday, 7th May, 2016, 9 am to 12 noon

TIME: 3 HOURS

MAX. MARKS: 100

Instructions to Candidates:

- 1. Answer any FIVE questions from part A and FIVE questions from part B. Use separate answer books.**
- 2. Draw labeled diagram wherever necessary**

PART-A, SPEECH & HEARING (Max. Marks 50)

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| Q1) Explain with labeled diagram the parts and functions of pure tone audiometry. | 10 |
| Q2) Explain the parts and function of cochlear implant and hearing aid. | 10 |
| Q3) What are assistive listening devices? Explain the principle and types of ALD's. | 10 |
| Q4) Explain artificial larynx and EGG. | 10 |
| Q5) Discuss the role of biomedical engineers in the field of speech and hearing | 10 |
| Q6) Explain your visit to speech and hearing department and its outcome. | 10 |

PART-B, PHYSIOTHERAPY (Max. marks 50)

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| Q1) Mention the gait variables. Explain the instrumentation for gait analysis. | 10 |
| Q2) Explain the physiology of Balance; explain the instrumentation for assessment and treatment of balance disorders. | 10 |
| Q3) Explain the instrumentation for Nerve Conduction Study. | 10 |
| Q4) Explain the role of following instruments in fitness training
(i) Treadmill (ii) bicycle ergometer | 5+5 |
| Q5) Explain the pain gate mechanism. Explain role of TENS in pain modulation. | 10 |
| Q6) Write short note on (i) Ultrasound Therapy. (ii) Superficial Heating Modalities. | 5+5 |