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# MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

*A Constituent Institution of Manipal University*

**II SEM M.Tech (BME) DEGREE END-SEMESTER EXAMINATIONS, APRIL/ MAY- 2017.**

**SUBJECT: ALLIED HEALTH SCIENCES (BME 5202)  
(REVISED CREDIT SYSTEM)**

**Saturday, 22<sup>nd</sup> April, 2017, 9 am to 12 noon**

**TIME: 3 HOURS**

**MAX. MARKS: 100**

**Instructions to Candidates:**

1. Answer all 5 questions from part A and all 5 questions from part B. Use separate answer books.
2. Draw labeled diagram wherever necessary

**PART-A, SPEECH & HEARING**

**(Max. Marks 50)**

- |     |   |    |
|-----|---|----|
| Q1) | Explain the basic parts and function of pure tone audiometer. Explain the application of pure tone audiometer.                          | 10 |
| Q2) | Explain the technology difference between analog and digital hearing aids. Explain the advantage of digital technology in hearing aids. | 10 |
| Q3) | Explain artificial larynx. Explain the parts and functions of artificial larynx   | 10 |
| Q4) | Explain the parts and function of spirometer. Write the application of it   | 10 |
| Q5) | Discuss the role and importance in the field of speech and hearing  | 10 |

**PART-B, PHYSIOTHERAPY**

**(Max. marks 50)**

- |     |   |       |
|-----|---|-------|
| Q1) | Explain the role of following instruments in physiotherapy<br>(i) Goniometer (ii).TENS (iii). Electrical stimulator (iv). Dynamometer | 2.5×4 |
| Q2) | Explain the Phases of gait. Mention the gait variables  | 10    |
| Q3) | Explain electromyography (EMG), its role in medical science. Add a note on Instrumentation for EMG                                    | 10    |
| Q4) | Explain the role of following instruments.<br>(i) Ultrasound therapy (ii) Short wave diathermy.                                       | 5+5   |
| Q5) | What are the components involved in Human Balance. Explain the assessment and training of balance                                     | 10    |