| Roll No. | | | | | | | | | | | | |
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**PRESIDENCY UNIVERSITY**
**BENGALURU**

**School of Engineering**

## Mid-Term Examinations - November 2024

**Semester**: V
**Date**: 07-11-2024
**Course Code**: MEC3076
**Time**: 11:45am to 01:15pm
**Course Name**: Human Robot Interaction
**Max Marks**: 50
**Program**: B.Tech
**Weightage**: 25%

**Instructions:**
*(i) Read all questions carefully and answer accordingly.*
*(ii) Do not write anything on the question paper other than roll number.*

### Part A

**Answer ALL the Questions. Each question carries 2 marks.** **5Qx2M=10M**

| | | | | |
|---|---|---|---|---|
| **1** | Tactile sensors are divided into …… sensors and …….. sensors. | **2 Marks** | **L1** | **CO1** |
| **2** | Which company developed Sophia Robot and what was the objective of it? | **2 Marks** | **L1** | **CO1** |
| **3** | What are Deictic gestures and explain in brief about it. | **2 Marks** | **L1** | **CO3** |
| **4** | How to identify the downcast state of mind of robot in non-verbal interaction? | **2 Marks** | **L1** | **CO3** |
| **5** | What is sensor and write some examples for sensors used in Human Robot Interaction. | **2 Marks** | **L1** | **CO1** |

### Part B

**Answer ALL Questions. Each question carries 10 marks.** **4QX10M=40M**

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|---|---|---|---|---|
| **6** | List the functions of Robotic Vision System and explain about each one of them in detail. | **10 Marks** | **L2** | **CO1** |
| | **Or** | | | |
| **7** | Explain the working of Inductive Proximity Sensor and camera sensor along with neat sketch. | **10 Marks** | **L2** | **CO1** |
| **8** | Explain about Keepon Robot, Paro Robot, Baxter Robot in detail which are part of evolution of Human Robot Interaction. | **10 Marks** | **L2** | **CO1** |

**Or**

| | | | | |
|---|---|---|---|---|
| **9** | Explain Human Robot Interaction is an interdisciplinary endeavor and also explain in detail about Sophia and i-Cub robot. | **10 Marks** | **L2** | **CO1** |
| **10** | Explain in detail about Interaction Rhythm and Timing and Posture and movement used in Human Robot Interaction with applications for each of it. | **10 Marks** | **L2** | **CO3** |

**Or**

| | | | | |
|---|---|---|---|---|
| **11** | Write in detail about Mimicry and Imitation and Touch used in Human Robot Interaction and explain each of them in detail. Also write few applications for each of it. | **10 Marks** | **L2** | **CO3** |
| **12** | Write in detail about nonverbal interaction used in Human Robot Interaction and also write few applications of it across different industries. | **10 Marks** | **L2** | **CO3** |

**Or**

| | | | | |
|---|---|---|---|---|
| **13** | Explain in detail about the working of Robotic Vision System along with neat sketch. | **10 Marks** | **L2** | **CO3** |