

**Time : 2 Hours**

**Total marks : 60**

**N.B.**

- (1) All questions are compulsory.
- (2) Figures to the right indicate full marks.
- (3) Assume additional data if necessary but state the same clearly.
- (4) Symbols have their usual meanings and tables have their usual standard design unless stated otherwise.
- (5) Use of calculators and statistical tables are allowed.

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|-----------|--|-----------|
| <b>Q1</b> | Attempt <b>Any two</b> of the following.   | <b>12</b> |
| <b>a</b>  | Write a note on transparency and openness in modern ubiquitous System.                       | <b>6</b>  |
| <b>b</b>  | Explain what do you mean by implicit HCI?  | <b>6</b>  |
| <b>c</b>  | Explain the ICT device and Physical World interaction in working with Ubiquitous system.     | <b>6</b>  |
| <b>d</b>  | List and explain characteristics of services use by smart devices.                           | <b>6</b>  |
| <b>Q2</b> | Attempt <b>Any two</b> of the following.   | <b>12</b> |
| <b>a</b>  | What is meant by mobile code? What are its benefits and challenges?                          | <b>6</b>  |
| <b>b</b>  | Write a note on user interface designs for personal computer interface.                      | <b>6</b>  |
| <b>c</b>  | Briefly describe the Single and Multi-Modal Visual Interface.                                | <b>6</b>  |
| <b>d</b>  | What are wearable devices or computers?  | <b>6</b>  |
| <b>Q3</b> | Attempt <b>Any two</b> of the following.   | <b>12</b> |
| <b>a</b>  | What is Tagging? What are issues in Tagging in Smart Physical environment?                   | <b>6</b>  |
| <b>b</b>  | What are Sensor net? List and explain various challenges in designing and deploying sensors? | <b>6</b>  |
| <b>c</b>  | What are MEMS? Explain in details  | <b>6</b>  |
| <b>d</b>  | What are RFID Tag? Explain in Details.   | <b>6</b>  |

- Q4** Attempt **Any two** of the following. **12**
- a** Explain how audio network helps in realizing pervasive communication. **6**
  - b** Explain any two of the following: a) TCP b) UDP c) VoIP **6**
  - c** Explain various ubiquitous network? **6**
  - d** Explain wireless network? **6**
- Q5** Attempt **Any two** of the following. **12**
- a** What is smart DEI? Explain how can we reducing complexity in these systems? **6**
  - b** Explain the unique features of Human Centered Design. **6**
  - c** Write a note on control systems in Smart environment. **6**
  - d** Compare between hard and soft RTS. **6**

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