



Institute of Information Technology

Jahangirnagar University
Professional Masters in IT

2nd Trimester Final Examination, Fall 2022

Duration: 3 Hours

Intake: Summer 2022, Spring 2022

Full Marks: 60

Course Code: PMIT – 6223

Course Title: IoT and Fog Computing

Do not write anything on the question paper.

There are 7 (Seven) questions. Answer any 5 (Five) of them.

Figures in the right margin indicate marks.

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|----|----|--|-----------|
| 1. | a) | Using a diagram explain how the data are converted into wisdom. Also explain the statement in context of internet of things that more data that is created, the better understanding and wisdom people can obtain. | 3+4
=7 |
| | b) | Briefly discuss the technological challenges of internet of things. | 5 |
| 2. | a) | Using an illustration show the ecosystem of internet of things and explain it. | 4 |
| | b) | Briefly explain the evolution of internet of things from the pre-internet era. Also list their key features. | 4 |
| | c) | Briefly discuss the criticism and controversies of internet of things. | 4 |
| 3. | a) | Describe the characteristics of the following components with their applications: (i) Transducer, (ii) Sensor and (iii) Actuator . | 6 |
| | b) | Explain how does the Poisson' ratio and gage factor can be used to determine the resistance of a wire. | 4 |
| | c) | Sketch a diagram to show the typical electronic sensor system. | 2 |
| 4. | a) | Draw the architecture of a smart sensor and briefly explain the working of each component. | 6 |
| | b) | Does the silicon technology is suitable for in different domain of smart sensor system? Justify and explain your answer. | 6 |
| 5. | a) | Define the fog computing and write its characteristics. | 4 |
| | b) | Make a table to show the differences between the fog computing and cloud computing for different requirements. | 4 |
| | c) | Draw a diagram to show the policy management for fog computing and explain the policies. | 4 |
| 6. | a) | Discuss the major issues and challenges that need to be considered when a wireless sensor network is to be designed? How this challenge can be overcome? Discuss in context of a suitable example. | 8 |
| | b) | What is ad-hoc sensor network? What are the differences between the ad-hoc sensor network and wireless sensor network? | 4 |
| 7. | a) | State the important characteristics of WSN. | 3 |
| | b) | Discuss in detail the design principles for Internet of Things system considering an example that you are asked to design in an agricultural field. | 9 |