(2 ½ Hours) [Total Marks: 75]

N.B. 1) All questions are compulsory.
2) Figures to the right indicate marks.
3) Illustrations, in-depth answers and diagrams will be appreciated.
4) Mixing of sub-questions is not allowed.

Q. 1 Attempt All

(a) 1. The core element is operated by _____ (10M)

a) PaaS b) IoT service Provider
c)SaaS d) IaaS

2. Who will use their own IoT business models?

a) PaaS
b) SaaS
c) IaaS
d) Service provider

3. This _____protocol allows user at one site to establish connection to another site and pass keystroke from local to remote host.

a) Telnet
b) FTP
c) IP
d) HTTP

4. Adheres to _____ approach for managing resources and support mapping to HTTP.

a) RETful b) IoT
c) Restful d) RESTful

5. Touch screen of mobile phone uses_____Sensor.

a) AFR Sensor b) Pellistor
c) Viscometer d) Tactile sensors

6. ITS stands for _____

a) Internet Travel Services
b) Internet Transportation Security
c) Intelligent Transportation Security
d) Intelligent Transportation Services

7.Global Sensor Network is built for _____.
a) Reducing cost and time for development
b) Reducing cost and increasing time for development
c) Increasing cost and increasing time for development
d) Increasing cost and decreasing time for development

8. APU (Accelerated Processing Unit) is also called _____
a) Fission b) Fusion
c) CPU c) GPU

9. FPGA contain an array of _____ logic blocks.
a) nonprogrammable b) programmable
c) Static d) Dynamic

10. Data in network layer is transferred in the form of _____.
a) Layers
b) Packets
c) Bytes
d)Bits

(b) Fill in the blanks (5M)
(LPWAN, Bluetooth, FPGA, CSMA/CS, MQT,)
1. _____is the protocol used in GSN.
2. _____ is a data link layer technology.
3. multiple access technique called _____ is used by IEEE 802.11 standard for wireless LAN
4. Sigfox is also called _____technology.
5. Digital signal processing, radio astronomy, computer vision, and speech recognition all are applications of _____.

Q. 2 Attempt the following (Any THREE) **(15M)**
(a) What are the different types of reference models? Explain each one in brief.
(b) Explain with a block diagram the IOT Functional model.
(c) How network domain helps in establishing the connection between the nodes in an IoT application?
(d) Discuss different M2M technologies?
(e) Discuss features of ETSI M2M high level architecture with diagram.
(f) Discuss the following in brief
1) Sensors 2) Tags

Q. 3 Attempt the following (Any THREE) (15M)

(a) write a short note on 3GPP.
(b) Explain the working and advantages of IEEE 802.11
(c) Explain a short note on 6LoWPAN with its functions and characteristics.
(d) How ICMP works? Discuss the advantages with an example.
(e) State the 6LoWPAN functions and characteristics.
(f) Explain in short RPL and CORPL. What is the difference between these protocols?

Q. 4 Attempt the following (Any THREE) (15)

(a) Differentiate between TCP and MPTCP
(b) Explain the working of the Datagram Congestion Control Protocol. & explain ECN with an example.
(c) Explain basic operations available in XMPP.
(d) How HTTP help us in our day to day life.
(e) Write a short note on AMQP and its working.
(f) How a subscriber subscribe to MQTT topic

Q. 5 Attempt the following (Any FIVE) (15)

(a) Discuss IOT Service Functional Group.
(b) How does the ITU-T IoT reference model work?
(c) What is the application of one's RPL protocols?
(d) Discuss the task performed by the network layer.
(e) State and explain important features of SCTP.
(f) What is a Service layer? Who accesses the service layer?
(g) Discuss in brief working of OMA.
(h) What is Mainstreaming?

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