**Summative Assessment of IoT Module**

Case Study: Review the requirements for Smart Health in the PDF document attached and answer the following questions.

1. Using the core system diagram shown in IoT Architecture module, identify and list the IoT devices and sensors that can be used to get the patient/customer related data in the SMART Health system.

Technology such as implantable and wearable devices, and mobile internet are used to dynamically access information, connect people, materials and institutions related to healthcare.

From the perspective of patients, they can use wearable devices to monitor their health at all times, seek medical assistance through virtual assistants, and use remote homes to implement remote services; from the perspective of doctors.

2. What type of edge processing can be done in SMART Health system?

The information can be processed locally using supercomputers,cloud computing and Laboratory Information Management System.

Picture Archiving and Communication Systems (PACS), Electronic Medical Record, radio-frequency identification (RFID) technology can be used to manage personnel materials and the supply chain, using integrated management platforms to collect information and assist decision-making.

3. In order to process sensor data for implementing various services what communication protocols can be used with the cloud/backend systems?

Message Queue Telemetry Transport (MQTT)

HyperText Transfer Protocol (HTTP)

Constrained Application Protocol (CoAP)

Data Distribution Service (DDS)

WebSocket.

Advanced Message Queue Protocol (AMQP)

Extensible Messaging and Presence Protocol (XMPP)

OPC Unified Architecture (OPC UA)

4. What type of components in the Cloud Setup will be needed to implement various services?

IoT systems are likely to require the use of a variety of processing software – and the adaptability of cloud services is likely to be required in order to deal with new requirements, firmware or system updates and offer new capabilities over time.

5. What types of data analytics services should be provided by the SMART Health system that will be useful to the customers?

The new disease risk prediction model collects data through wearable devices and smart apps, uploads them to the cloud through a network, and analyzes the results nbased on big data-based algorithms to feed back the predicted results to users in real time via short message services. They help doctors and patients adjust their medical behaviors and lifestyles at any time and also help decision-makers to develop regional health strategies to achieve the goal of reducing disease risk.

6. List the security issues that must be addressed in implementing various services for SMART Health.

Compliance:   
Providing confidence about the operation of these IoT systems is necessary both due to the regulations of specific industries, sectors and verticals and also the norms and expectations of the stakeholders of the IoT systems.

Security and Privacy:

The question of the security and trustworthiness of distributed heterogeneous IoT systems is a hard problem whose solutions must scale and evolve with the systems. Data protection is necessary, including significant privacy concerns regarding data that relate to individuals. Gaining assurance that these systems are safe, secure, resilient and uphold their stakeholders expectations about privacy.