# Tutorial on IoT

Question 1

(c) Fog computing has the potential to increase the overall performance of IoT applications as it tries to perform part of high-level services which are offered by cloud inside the local resources.

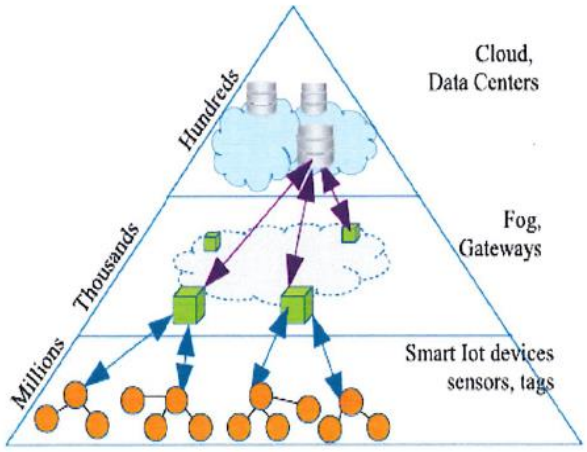


Figure 4: The role of the cloud and fog resources in the delivery of IoT services.

Figure 4 shows a diagram illustrating the role of the cloud and fog resources in the delivery of IoT services. Analyse how fog computing can serve as an optimal choice for the IoT designers for its features in location, distribution, scalability, density of devices, mobility, real-time service, and on the fly analysis.

(13 marks)

Question 2

2. Figure 2 below presents the elements in IoT.

(a) Explain the meaning of each element using examples where necessary such as Wi-Fi, Bluetooth, Mobile IP, cellular networks, etc.


Figure 2: IoT Elements

- Identification (3 marks)
- Sensing (3 marks)
- Communication (3 marks)
- Computation (3 marks)
- Services (3 marks)
- Semantics (3 marks)

(b) At an IoT forum, some people argue that ZigBee technology is just a low speed version of Bluetooth technology, and the PAN coordinator in ZigBee is just another name for the Master node in Bluetooth. Do you agree with this argument or not? Justify your answers.

(7 marks)

Question 3:
Use DODAG protocol to build a DODAG topology for the network below.

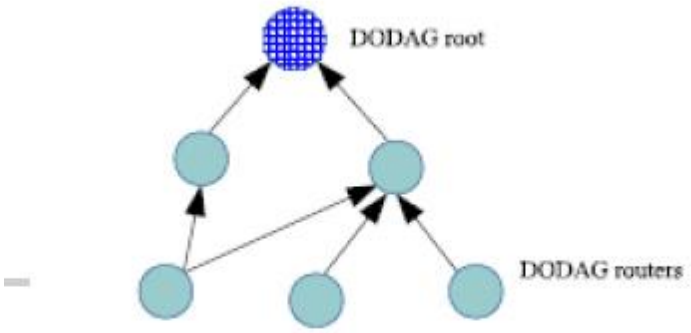


Fig. 19. DODAG topology.