Graphic Era
HILL UNIVERSITY
Established by an Act of the State Legislature of Uttarakhand (Adhiniyam Sankhya 12 of 2011)
University under section 2(f) of UGC Act, 1956

Term Evaluation (ODD) Semester Examination September 2025

Roll no...............................

Name of the Course: MTech
Semester: I
Name of the Paper: Internet of Things
Paper Code: MCS 124
Time: 1.5-hour   **Maximum Marks: 50**

Note:
   (i)   Answer all the questions by choosing any one of the sub-questions
   (ii) Each question carries 10 marks.

Q1.   (10 Marks)
   a. Differentiate IoT from traditional Internet-based systems. Highlight at least three features that make IoT transformative for modern applications. (CO1)

                              OR

   b. Examine the significance of open architecture in IoT. How does it promote flexibility, innovation, and integration of heterogeneous devices? (CO2)

Q2.   (10 Marks)
   a. Illustrate a generic layered IoT architecture. Explain how each layer contributes to connectivity, data processing, and application support. (CO1)

                              OR

   b. Describe the structural aspects of an IoT system. How do these aspects support interoperability and system scalability? (CO2)

Q3.   (10 Marks)
   a. Compare at least two IoT frameworks in terms of scalability, security, and deployment flexibility. Support your answer with examples. (CO1)

                              OR

   b. Discuss how communication capabilities and mobility support ensure reliability in IoT applications such as smart transportation and healthcare. (CO2)

Q4.   (10 Marks)
   a. Discuss the basic nodal capabilities of IoT devices (sensing, communication, actuation, computation). Provide an example of how these are integrated in a smart IoT application. (CO1)

                              OR

   b. Discuss the significance of interoperability in IoT. How do standardization efforts and frameworks help achieve interoperability among heterogeneous devices? (CO2)

Q5.   (10 Marks)
   a. Examine the ITU-T working definition of IoT. How does it address interoperability and global standardization challenges? (CO1)

                              OR

   b. Explain how communication technologies (e.g., 5G, LPWAN) and mobility support are essential for IoT applications such as smart transportation and healthcare. (CO2)