JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2026

B.Tech-VII Semester (CSE/IT)

COURSE CODE (CREDITS): 18B1WCI738 (3) MAX. MARKS: 15

COURSE NAME: INTERNET OF THINGS

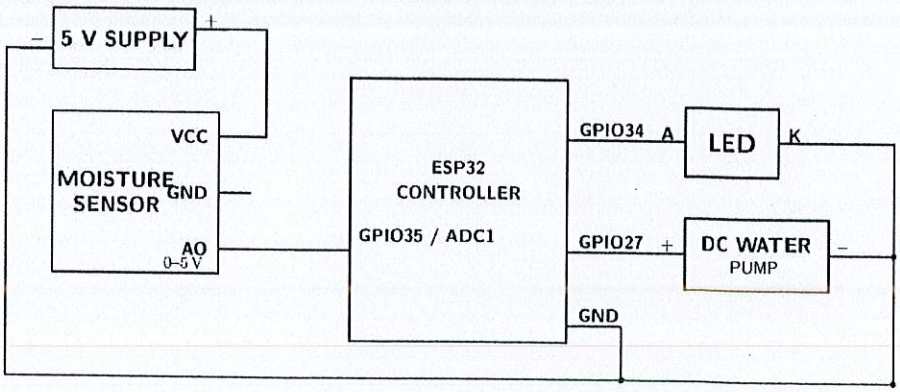
COURSE INSTRUCTOR: AAYUSH SHARMA MAX. TIME: 1 Hour

Note: *(a) All questions are compulsory.*

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

(c) Use of calculator is allowed

T-1 EXAMINATION- AUG-2026

<table>
<tr><th>Q.No</th><th>Question</th><th>CO</th><th>Marks</th></tr>
<tr><td>Q1</td><td>GreenGuard records the following five messages or conditions. Match Column A with Column B. Each option is used exactly once.
<table>
<tr><th>Column A</th><th>Column B</th></tr>
<tr><td>1. Telemetry</td><td>A. A flow sensor detects water movement after the pump starts.</td></tr>
<tr><td>2. Event</td><td>B. The mobile application requests the pump to start.</td></tr>
<tr><td>3. State</td><td>C. Soil moisture crosses the dry threshold.</td></tr>
<tr><td>4. Command</td><td>D. Node 17 reports 28% soil moisture at 10:03.</td></tr>
<tr><td>5. Feedback</td><td>E. Latest recorded condition: 'Pump ON'.</td></tr>
</table>
Write the answer as: 1-__, 2-__, 3-__, 4-__, 5-__.</td><td>[CO1]</td><td>[1 x 5]</td></tr>
<tr><td>Q2</td><td>The ultrasonic sensor is mounted at the top of a 1.50 m-high water tank. Its echo returns after 6 ms. Take the speed of sound as 343 m/s.
(a) Calculate the distance between the sensor and the water surface.
(b) Calculate the depth of water in the tank.
(c) GreenGuard starts the pump when water depth is below 0.50 m. Should a pump-start command be issued?</td><td>[CO2]</td><td>[2+2+1]</td></tr>
<tr><td>Q3</td><td>A student submits the following pin-level wiring for the GreenGuard field node:


Inspect every pin and connection. Identify and correct five wiring/design errors. Write each answer as ERROR -> CORRECTION.</td><td>[CO2]</td><td>[1 x 5]</td></tr>
</table>

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