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Course Code: CSE 315
Course Title: Software Engineering
Class Test: 1 Section: 65_J
Time: 1 Hr Marks: 10

Read the scenario and answer the following questions:

A National Smart Healthcare Emergency Response System (SHERS) is proposed to support emergency healthcare services during large-scale public health incidents and natural disasters. The system collects real-time data from hospital information systems, IoT-enabled medical devices, ambulance tracking systems, and national health surveillance platforms. Advanced analytics are used to predict patient influx, resource shortages, and critical risk zones.
The platform supports rapid decision-making by enabling dynamic allocation of medical staff, hospital beds, and emergency supplies, while coordinating actions among hospitals, emergency responders, and government health authorities. System outputs must be continuously verified as new data arrives, since delayed or incorrect decisions may directly affect patient safety and survival.
The system operates under strict healthcare regulations, must ensure high data security and reliability, and integrates with multiple external government and third-party systems.

1. Identify the most suitable software development model for developing the Smart Healthcare Emergency Response System and justify your choice based on system characteristics. 6
2. Draw a Use Case Diagram for the Smart Healthcare Emergency Response System showing key actors and system functionalities. 6
3. Briefly describe two non-functional requirements that are critical for the effective operation of this system. 3