AHMEDABAD UNIVERSITY
School of Engineering and Applied Science
2025-2026 Monsoon

CSE300 Software Engineering
End-Term Examination
Friday 05 December 2025. 17:00 – 18:00

Name:	Roll no.	A	U	2							Marks 40

Write your answers in the answer book.

All the questions are compulsory.

1. The Municipal Corporation of the large city has decided to develop a Web-based pothole tracking and repair system (PHTRS). A description follows: *Marks*

Citizens can log onto a website and report the location and severity of potholes. As potholes are reported, they are logged within a "public works department repair system" and are assigned an identifying number, stored by street address, size (on a scale of 1 to 10), location (middle, curb, etc.), district (determined from street address), and repair priority (determined from the size of the pothole). Work order data are associated with each pothole and include pothole location and size, repair crew identifying number, number of people on crew, equipment assigned, hours applied to repair, hole status (work in progress, repaired, temporary repair, not repaired), amount of filler material used, and cost of repair (computed from hours applied, number of people, material and equipment used). Finally, a damage file is created to hold information about reported damage due to the pothole and includes citizen's name, address, phone number, type of damage, and amount of damage in Indian rupees. PHTRS is an online system; all queries are to be made interactively.

Draw following diagrams for the PHTRS system. Mention clearly the assumptions.

(a) Use Case *(7)*

(b) Class *(8)*

(c) Sequence *(7)*

(d) State Machine *(8)*

2. Refer PHTRS description given above to answer the following questions. *(10)*

(a) In the PHTRS Scrum project, who is responsible for prioritizing features (requirements)?

(b) Any PHTRS feature would first be added to _____artifact.

(c) Whom should the Scrum Team consult when clarifying details such as *severity scale*, *district mapping*, and *hole status*?

(d) Write a user story for the scenario "Report Pothole".

(e) Which Scrum artifact tracks tasks?

(f) If developers are blocked because the "district mapping data" is missing, this should be raised during which event of the Scrum?

(g) Who ensures that the PHTRS team follows Scrum practices?

(h) What would a steep downward slope in the PHTRS Burndown Chart indicate? (select one option)

(I) The team is rapidly completing tasks

(II) A new epic has been added

(III) Work is being re-estimated frequently

(IV) The sprint goal cannot be achieved

(i) Which are the three parts of a user story?

(j) The meeting where the PHTRS team discusses "what went well and what can improve" is called _____.