Total No. of Pages:2 Roll No. .....

~~FOURTH SEMESTER~~ VIII Sem B.Tech. (FT)

MID SEMESTER EXAMINATION ***March-2019***

SE406 ADVANCES IN SOFTWARE ENGINEERING

Time: 1.30 Hours ***Max. Marks:30***

Note: Answer all questions. Assume suitable missing data, if any.

1. Answer all the following questions: **[2x5]**
   [a] List deficiencies of less formal approaches.
   [b] What is domain engineering? List major activities included in domain engineering.
   [c] Why cleanroom software engineering has not gained widespread usage?
   [d] What is the five step approach involved in certification process of cleanroom software engineering?
   [e] Develop a constructive specification for a set that contains tuples of natural numbers of the form (x, y, z^2) such that the sum of x and y equals z.

2. Answer all the following questions:
   [a] Illustrate with a diagram the strategy of cleanroom software engineering. How cleanroom software engineering differs from conventional software engineering practices? **[5]**
   [b] Develop a set of domain characteristics for information system that are relevant to a university's student data processing. **[5]**

P.T.O.

3. Answer all the following questions:

[a] You have been assigned to a software team that is developing software, called MemoryDoubler that provides greater apparent memory for a PC than physical memory. This is accomplished by identifying, collecting, and reassigning blocks of memory that have been assigned to an existing application but are not being used. The unused blocks are reassigned to applications that require additional memory. Making appropriate assumptions and using natural language, define

a. The data invariant.
b. The state.
c. The operations. [5]

[b] Develop a mathematical description for the state and data invariant for this problem and refine this description in the Z specification language. [5]

END