

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)**

**CLASS: BTECH
BRANCH: IT**

**SEMESTER : VI
SESSION : SP/2023**

SUBJECT: IT305 SOFTWARE ENGINEERING

TIME: 3 Hours

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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	CO	BL
Q.1(a) Illustrate the drawbacks of waterfall model.	[5] [CO1]	[BL4][1]
Q.1(b) Draw a general model of design process	[5] [CO1]	[BL3][1]
Q.2(a) Discuss the different application types.	[5] [CO1][CO3]	[BL4][2]
Q.2(b) Differentiate between the needs of managers, system engineers and system test engineers to read the requirement documents.	[5] [CO1][CO3]	[BL3][2]
Q.3(a) A weather station is a package of software controlled instruments which collects data, performs some data processing and transmits this data for further processing. The instruments include air and ground thermometers, an anemometer, a wind vane, a barometer and a rain gauge. Data is collected periodically. When a command is issued to transmit the weather data, the weather station processes and summarises the collected data. The summarised data is transmitted to the mapping computer when a request is received. The weather station sends a summary of the weather data that has been collected from the instruments in the collection period to the weather information system. The data sent are the maximum, minimum, and average ground and air temperatures; the maximum, minimum, and average air pressures; the maximum, minimum, and average wind speeds; the total rainfall; and the wind direction as sampled at five-minute intervals. Based on the information above, draw all the weather station object classes.	[5] [CO3][CO4]	[BL3][3]
Q.3(b) Write the difference between sequence and state diagrams with an example to illustrate.	[5] [CO1][CO3][CO4]	[BL1][3]
Q4(a) Write the difference between inspection and testing.	[5] [CO1][CO3][CO4]	[BL1][4]
Q.4(b) Discuss the components of a test plan	[5] [CO1][CO3][CO4]	[BL4][4]
Q.5(a) Write project estimation techniques in software engineering.	[5] [CO2][CO3][CO4]	[BL1][5]
Q.5(b) Suppose a project was estimated to be 400 KLOC. Calculate the effort and development time for each of the three model i.e., organic, semi-detached & embedded in basic COCOMO model.	[5] [CO2][CO3][CO4]	[BL3][5]

:27/04/2023:M