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Semester VI (B.Tech)

Er. No.....

Academic Year:2021-22

Jaypee University of Engineering &Technology, Guna

T-3(Even Semester 2022)

18B11CI612–SOFTWARE ENGINEERING

Maximum Duration: 2 Hours

Maximum Marks: 35

Notes:

1. This question paper has 05 (five) questions.
2. Write relevant answers only.
3. Do not write anything on question paper (Except your Er. No.).

Marks

Q1. An embedded system project with 600 KLOC has to be developed. Project manager has a choice of hiring developers from two pools of developers. [07]

Pool 1: very highly capable with very little experience in the programming language being used. (Consider EAF=0.9348 for this pool)

Pool 2: developers of low quality but a lot of experience with the programming language. (Consider EAF=1.22 for this pool)

What is the impact of hiring all developers from Pool-1or Pool-2?

Q2. Suppose you are the manager of a software project requiring the following activities.

Activity No.	Activity ID	Duration (weeks)	Immediate Predecessor
1	A1	4	-
2	A2	4	-
3	A3	2	1 (m1)
4	A4	4	1 (m1)
5	A5	3	2 (m2)
6	A6	2	5 (m4)
7	A7	8	3,4,6 (m3)
8	A8	12	3,4,6 (m3)
9	A9	18	3,4,6 (m3)
10	A10	10	6 (m5)
11	A11	8	7,8,9 (m6)
12	A12	2	10,11 (m7)

(a) Estimate the Minimum Time (MT) required for the project using critical path method. [3]

(b) Find the flexibility in starting of each activity without any delay in completion of project. [4]

Q3. Consider the following pseudo code : [7]

```
int BinSearch (char *item, char *table[], int n)
{
  int bot = 0;
  int top = n - 1;
  int mid, cmp;
  while (bot <= top) {
    mid = (bot + top) / 2;
    if (table[mid] == item)
      return mid;
    else if (compare(table[mid], item) < 0)
      top = mid - 1;
    else
      bot = mid + 1;
  }
  return -1; // not found
}
```

Estimate the upper bound of independent paths in the above code

Q4. Briefly describe the following [6]

I. Corrective maintenance
II. Adaptive maintenance
III. Perfective maintenance

Q5. (a) With the help of diagram, explain the Scrum model with its advantages and disadvantages. [4]

(b) With of help of diagram, explain the types of messages which are used in Sequence Diagram. [4]