SET A Design and Analysis of Software Systems 29/01/2024

Quiz - 1

Name: **Roll No:**

This is a closed-book, closed-notes Quiz. Answer all questions for a maximum score of **30 points**. The total time for the test is **45 min**.

Credit is given for what you write, not what you are thinking. Write your answer in the space provided for the question. Partial credit will be given based on content, not quantity.

Good Luck!

1. **What are the triple constraints in project management? (Hint: Think about the triangle in drawn in class). Explain briefly how process influences the triple constraints. (4 points)**

2. **What are the key differences between Waterfall and Scrum software development methodologies, and when might you choose one over the other for a project? (3 points)**

29/01/2024

SET A

Design and Analysis of Software Systems
Quiz - 1

3. In the Agile SDLC model, what is the primary emphasis? (1 point)

a) Extensive documentation and planning
b) Continuous collaboration with customers and responding to change
c) A strict and inflexible project schedule
d) Completing all development work upfront before any testing begins

4. Given the task table below perform the following (6 points):

Task Identifier	Estimated Hours	Task Predecessors
A	10	None (start)
B	25	A
C	20	A
D	20	C
E	18	B
F	10	E
G	52	D,F
H	30	E
I	0 (done)	H,G

a. Construct a network diagram:

b. Identify the critical task path:

c. Assuming that all its preceding tasks are performed in exactly the hours estimated how much slack time does Task D have?

d. Assuming that all its preceding tasks are performed in exactly the hours estimated how much slack time does Task E have?

SET A

Design and Analysis of Software Systems

Quiz - 1

29/01/2024

5. Explain the concept of "Cone of Uncertainty" in software estimation. How does it evolve throughout a project's lifecycle (3 points) (0.5)

6. Provide one example in each category of the two major categories of requirements and explain why it belongs to that category. Be specific ! (3 points)

7. Write code in Python to accomplish the following: Run a loop to read some date value as input from command line and break the loop if and only if the input date is equal to today's date. (5 Marks)

SET A Design and Analysis of Software Systems 29/01/2024
Quiz - 1

8. **There are multiple syntactic and logical errors in the following Python script that implements stack. Please list down all the "logical" errors with line number and error explanation. (5 Marks)**

```
1.  class Stack                                   assuming this is --
2.    define __init__(self)
3.      self.stack = []
4.    define push(self, item)
5.      self.stack.append(item)
6.    define pop(self)
7.      return self.stack.pop(0)
8.    define top(self)
9.      return self.stack[1]
10.   define is_empty(self)
11.     return len(self.stack) === 0
12.   define size(self)
13.     return len(self.stack)
14.   define __str__(self)
15.     return __str__(self.stack)
16. s = stack()                                   assuming --
17. s.push(0)
18. s.push(0)
19. printf(s.pot())
20. printf(s.top())
21. printf(s._empty())
22. printf(s.size())
23. printf(s)
```