ST. XAVIER'S COLLEGE
KOLKATA
(AUTONOMOUS)

2nd SEMESTER EXAMINATION
JUNE - JULY 2021
M. Sc. COMPUTER SCIENCE

CMSM4221

SOFTWARE ENGINEERING

Wednesday, June 16, 2021
1:00 PM to 4:00 PM
3 hours
Full Marks : **80**

PLEASE READ THESE INSTRUCTIONS BEFORE YOU START WRITING:

1. Of the questions attempted, the answers to only the first required number of questions (as stipulated in the question paper) will be evaluated. **So please do not attempt extra questions**.
2. Use fountain pen or ball-point pen of **blue** or **black ink**.
3. Write **(not type)** the answers legibly, in your own words as far as practicable, on A4 size sheets.
4. Save the pages of your answer sheets (hand-written document) to a single PDF file and name the document accurately i.e. **Roll No_Paper Code.PDF** (example: 147_PH36141T).
5. Send the PDF file to the following email address **(in REPLY mode) within 30 minutes of the completion of the examination**: **cmsm42212021@sxccal.edu**
6. In the subject field of your email, please write "**Answer Script – Roll No, Paper Code**" (example: "Answer Script – 147, PH36141T").
7. The scanned answer scripts should have **enough clarity** to enable evaluation.
8. On top of each page **handwrite** the following information: **Name, Roll Number, Paper Code , Date,** and **Page Number**
9. No multiple submissions would be allowed.

The marks are given in **brackets ( )** at the end of each question or part question.

The question paper consists of **2** pages.

Of the questions attempted, the answers to only the first required number of questions (as stipulated in the question paper) will be evaluated.
So, PLEASE DO NOT ATTEMPT EXTRA QUESTIONS.

GROUP A
[40]

Answer ANY 2 **(5×2)**

1. What, according to you, are the benefits of a good design?
2. Mention the advantages of a spiral process model.
3. Discuss the advantage and problems associated with Incremental delivery.

Answer ANY 2 **(15×2)**

4. Discuss software design quality guidelines with respect to a product of your choice.
5. Describe how you would incorporate any 5 design concepts in your project design.
6. Explain with the help of your system, the requirements elicitation, specification and validation processes.

GROUP B
[40]

Answer ANY 2 **(5×2)**

7. Explain need for software project management.
8. Explain any five reliability metrics.
9. Explain integration testing.

Answer ANY 2 **(15×2)**

10. a) SW teams can be organized into number of different team structures. Explain. **(10)**
    b) Discuss the advantages of Function Points over LOC. **(5)**

11. a) Explain complete COCOMO. **(10)**
    b) Determine the cyclometric complexity for the following program segment with the help of a CFG.: **(5)**

```
{ int i, j, k;
for (i=0 ; i<=N ; i++)
p[i] = 1;
for (i=2 ; i<=N ; i++)
{
k = p[i]; j=1;
while (a[p[j-1]] > a[k] {
p[j] = p[j-1];
j--;
}
p[j]=k;
}
```

12. a) Explain Critical Path with an example. **(10)**
    b) Explain Structured Walkthrough. **(5)**

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