[5840]-301
M.Sc. (Computer Science)
CSUT - 231 : SOFTWARE ARCHITECTURE AND DESIGN PATTERNS
(Revised 2019 Pattern) (Semester - III) (CBCS) (Credit : 4)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) *Q. 1 is compulsory.*

2) *Solve any Five questions form Q.2 to Q.7.*

3) *Questions 2 to Questions 7 carry equal marks.*

Q1) Solve any Five of the following : **[10]**

    a) Define Software Architecture.

    b) List any 2 structural things and draw it's notation.

    c) Define pattern.

    d) Draw structure of decorator pattern.

    e) What is GRASP?

    f) What is Inversion of Control?

Q2) Attempt All :

    a) Describe a template of Design patterns. **[7]**

    b) List advantages and disadvantages of singleton design pattern. **[5]**

Q3) Attempt All :

    a) What is abstract factory design pattern? And write consequences of it in detail. **[7]**

    b) Write a short note on pipes and filters architecture style. **[5]**

Q4) Attempt All :

    a)   Discuss GRASP in detail.   **[7]**

    a)   Explain spring framework Architecture with suitable diagram.   **[5]**

Q5) Attempt All :

    a)   i)   Describe intent and applicability of adapter design pattern.   **[4]**

            ii)   List participants and structure of observer design pattern.   **[3]**

    b)   Write a short note on protected variations (PV).   **[5]**

Q6) Attempt All :

    a)   i)   Describe layered systems Architectured style with diagram.   **[5]**

            ii)   List three categories of GOF design pattern.   **[2]**

    b)   Why software architecture is important?   **[5]**

Q7) Write short notes on any two of the following :   **[12]**

    a)   Rational Unified Process.

    b)   Microservices with spring.

    c)   Law of Demeter (Don't talk to strangers)

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