Total No. of Questions : 8] SEAT No. :

P4136 [Total No. of Pages : 3

[4860]-342
M.E. (Computer)
SOFTWARE DESIGN AND ARCHITECTURE
(2008 Pattern) (Elective - III (a)) (Theory)

Time : 3 Hours] *[Max. Marks : 100*

Instructions to the candidates:

1) ***Answer ANY THREE questions from each section.***
2) ***Answers to the Two Sections should be written in separate books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***
5) ***Assume suitable data, if necessary***

SECTION - I

Q1) Write in brief on ANY SIX of following : **[18]**

a) Software development life cycle and place for Software DESIGN in it.

b) Detailed design

c) Any one design pattern

d) Software modules and modularity

e) Concept of Archetype patterns

f) Applications of software systems in business

g) Information hiding, interface

h) Allocation view

Q2) Explain ANY FOUR of the following concepts with examples **[16]**

a) User interface design

b) Major phases of software design process

c) Data design

d) Role of design activity

e) Why and how do we document behavior (Hint state, sequence diagrams)

f) Component- Connector view

P.T.O.

Q3) a) Compare and contrast software design and software requirements. **[4]**

b) With an example show how client server architectural style is useful for web applications. **[4]**

c) Discuss how performance, security are important considerations when designing software systems. **[4]**

d) What are the strengths and weaknesses of step-wise refinement strategy. **[4]**

Q4) With a suitable example of your own for any system, draw DIAGRAMS for ANY FOUR of following and also explain concepts involved **[16]**

a) Entity structure diagram

b) ER diagram

c) ISO 2000

d) Software design process

e) Class diagram

f) Software development life cycle

SECTION - II

Q5) In brief state the concept/term; illustrate with good examples the following concepts **[16]**

a) Archetype pattern : product or CRM

b) Design pattern: proxy or iterator

c) Design attributes: modifiability, portability

d) Advantages of java technology while designing/implementing software systems

Q6) Write short notes on ANY THREE **[18]**

a) Software design

b) How to make web systems user-friendly, usable

c) Software components, frameworks, programming languages

d) MVC architecture

e) UML for documenting design

f) Advantages of architecture (civil) in building houses and role of an Architect in civil engineering

Q7) Write in brief on ANY FOUR of the following : **[16]**

a) How software design differs from designing other systems like hardware, chair, houses etc

b) Prototyping of software systems

c) Object oriented concepts: inheritance, classes

d) Remote procedure calls and sockets (as connectors)

e) Interfaces and Documenting software interfaces

Q8) State what you understand by following approaches for designing software systems and what are the advantages of the approach. Give example applications of your own to illustrate the following approaches. **[16]**

a) Jackson structured programming approach

b) Object oriented approach

c) Top down approach (Hint: using Modules and subsystems, functional decomposition)

d) Waterfall model approach to software design and development