Department of Computer Science
Gujarat University
PGDCSA – II
Sessional – I
Object Oriented Analysis & Design

Time Duration: 90 Minutes | 7th March, 2023 | Max. Marks: 40

Q-1 **Attempt the following (any four)** **20**

4 (1.) Explain the following terms with example in brief:
i. System ii. Subsystem iii. Super System
iv. Functional decomposition v. system boundary

2 (2.) List and explain various skill set required by system analyst.

1 (3.) Write SDLC phases and objectives of each phase.

3 (4.) Write full-form of PERT and CPM.PERT/CPM chart shows what? What do you mean by Critical Path? What is Gantt chart?

5. List any five-information gathering techniques. Explain any one in detail.

6. List various reasons why projects fail. Explain any two reason in detail.

Q-2 **Attempt the following (any two)** **14**

(1.) Draw DFD for Library Management System of the our department. Make all the appropriate assumptions.

OR

1. Compare: Logical DFD and Physical DFD.
2. Draw Use case diagarm for Library Management System of the our department. Make all the appropriate assumptions.

OR

(2.) Explain the use case relationship with symbol and meaning.

Q-3 **Attempt the following (any three)** **06**

1. Define: 1. Prototype 2. Model
(2) Write full-form of UP. UP defines what four life cycle phases?
3. What does CASE tools contains? Write only name of any two CASE tool.
4. What do you mean by 1. Breakeven point 2. Return of Investment
(5.) What do you mean by stack holders? What are the general group of stakeholders?

Department of Computer Science
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PGDCSA – II
Sessional – II
SOOAD

Date: 05/05/2023 Time Duration: 90 Minutes Max. Marks:40

Q-1 Attempt the following (any four) 20

1. List various metaphors for Human Computer Interaction. Explain any two in detail
2. Explain the following terms in 1-2 lines
   I. Unauthorized User II. Registered User III. Authorization
   IV. Access Control List V. Privileged User
3. Explain 1. Unit testing 2. Integration Testing 3. Usability Testing . Who tests software?
4. What are the three main components for Class Diagram? Which symbols are used in class diagram to represent visibility in class diagram? Differentiate Aggregation and Composition for class diagram with appropriate example.
5. List and explain various types of outputs reports.
6. *Explain the following terms in 1-2 Lines*
   I. Coupling II. Cohesion III. Data warehouse
   IV. Digital signature V. digital certificate

Q-2 Attempt the following (any two) **16**

1. Draw sequence diagram for ATM cash with-drawl.

OR

1. *List and explain various symbols with their name and meaning used in sequence diagram.*
2. Draw activity diagram for the Withdraw cash from ATM.

OR

2. List and explain various symbols with their name and meaning used in activity diagram.

Q-3 Attempt the following (any two) **04**

1. Explain in 1-2 lines I. production system II. Test System
2. Explain in 1-2 lines for SCRUM. I. sprint II. Scrum Master
3. What do you mean by alpha version and beta version? What is the general lifetime for alpha version and beta version?

GUJARAT UNIVERSITY
5 Year Integrated M. Sc. (Computer Science)
Semester : IV
Subject Name : Web Application Development

Time : 1.5 Hours **Total Marks : 30**
Date: 3rd May, 2023

Instructions:

- **Draw Diagrams wherever necessary.**
- **Make Assumptions wherever necessary.**

Q-1 Attempt the following (Any 2) **[10]**

1. Explain following string manipulation functions with an appropriate example:
   i.explode ii. implode iii. strcmp iv. substr v. str_ireplace
2. Explain functions that convert between strings and ascii integer values And functions that search a string with an appropriate example.
3. List with meaning of special characters used in POSIX regular expression outside and inside square brackets with an appropriate example.
4. Explain variable scope in function with appropriate example.

Q-2 Attempt the following (Any 2) **[10]**

1. Explain the following OOP concepts in your word:
   i.Object ii.Class iii.Polymorphism iv.Inheritance v.DataAbstraction
2. List and explain access specifier with appropriate example
3. Explain exception handling with their block structure.
4. Explain with example: How you make a user define exception?

Q-3 Attempt the following (Any 2): **[10]**

1. Explain in brief with example for MySQL:
   i.Tables ii. Columns iii.Rows iv.Values v.Keys vi.Schemas
   vii. Relationships
2. Explain Grant Privileges, View Privileges and Revoke Privileges
3. Explain PHP built-in calendar functions:
   i. date() ii.strtotime() iii.mktime() iv. time()
4. What do you mean by session explain with appropriate example.

DEPARTMENT OF COMPUTER SCIENCE
GUJARAT UNIVERSITY
PGDCSA - II
Sessional – II Theory
Web Application Development

Time Duration: 75 Minutes **Date: 2nd May, 2023** **Max. Marks:20**

Q-1 ***Do as directed* (any five)** **10**

1. What do you mean by relationship for RDBMS? List and explain various relationships with appropriate example.
2. *What do you mean by Unix Epoch? What is Y2K38 problem?*
3. What are two types of Regular Expression? Explain preg_match function with appropriate example.
4. *Write only name of various type of extension for working with MySQL API?*
5. Explain the meaning of following pattern for regular expression
   I. . ii. \d
6. Explain any operator with its syntax for subquery.
7. *For uploading a file, HTML form , method attribute value must be _____ and enctype attribute value must be _____*

Q-2 **Attempt the following (any two)** **10**

1. *Explain web database architecture with appropriate diagram.*
2. List and explain any five built-in methods of Exception class.
3. List and explain any five File Modes with their name and use.

DEPARTMENT OF COMPUTER SCIENCE

GUJARAT UNIVERSITY

PGDCSA SEMESTER - 1

SUBJECT: NETWORKING ESSENTIALS

Max Marks:40 March, 2023 Time:90 Minutes

Q1 Answer the followings in brief: (Any 5) **[05 marks]**

1) Which Linux command is used to display network configurations of a PC? ipconfig
2) Which protocol finds the MAC address for given IP address?
3) Name the layer of OSI Model that is dependent on hardware. Physical
4) What is the size of IPv4 address (in bits)?
5) Give the command that is used to check whether Linux server (172.16.116.239) is connected with your computer or not.

Q2 Do as Directed: (Any 5) **[25 marks]**

1) Write a short note on IP Addresses.
2) What do you understand by Network Topology? Explain any 4 topologies in brief.
3) Give the working of any 5 network devices in 2-3 sentences.
4) State different types of cables used for Networking, explain each in brief.
5) What is DNS? How does it work?
6) Explain the functionality of any 5 layers of OSI Model.
7) Explain the role of NAT, VPN and Firewall in 2-3 sentences each.

Q3 Differentiate between: **[06 marks]**

1) Wired and Wireless Network
2) IP Address and MAC Address
3) Twisted Pair Cable and Optical Fiber Cable

Q4 Explain the functionality of following protocols: **[04 marks]**

1) DHCP
2) DNS
3) TELNET
4) ARP

DEPARTMENT OF COMPUTER SCIENCE
GUJARAT UNIVERSITY
PGDCSA SEMESTER - 2
SUBJECT: NETWORKING ESSENTIALS

Max Marks:40 Time:90 Minutes

Q1 Answer the followings in brief: (Any 5) **[05 marks]**

1) State the role of firewall software.
2) What is the port number for http protocol?
3) Give main difference between classful and classless IP address.
4) State any 2 protocols used for email communications
5) What is the role of switch in networking?
6) What is the full form of CIDR?

Q2 Do as Directed: (Any 5) **[25 marks]**

1) State the use of following protocols:
   IP, DNS, TCP, ICMP, MIME
2) State the use of following networking commands:
   nslookup, netstat, ping, SSH, telnet
3) State the use of following Linux commands:
   Kill, sudo, ps, vi, grep
4) Write a short note on Wireshark software
5) Write a short note on nmap software
6) *Explain wireless technologies in brief.*

Q3 Do as directed: **[10 marks]**

1) Give the range of class B address. Suppose, if you want to divide a class B networking into 16 subnets, calculate its subnet mask. (Given $\log_2 16=4$)

   (Formula – 1 mark, Calculations – 2 marks, Answer – 1 mark)

2) One of the address in a block is : 110.23.120.14/20 , find the number of addreses in the block, its first address and the last address.

   (Formula – 1 mark, Binary conversion – 2 marks, no. of address – 1 mark, first addr – 1 mark, last address – 1 mark)

Department of Computer Science
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PGDCSA - II
Sessional – I

Subject: Object Oriented Programming using Python
Duration: 1.5 hrs

Date: 03 / 03 / 2023
Maximum Marks: 30

Q.1 **Answer the following. (Any 3)** **[12]**

i) Justify, Python is an interpreted language.
ii) Explain, how *range()* is different from other sequence data types in Python.
III) Explain the role of PVM in memory management in Python.
Iv) Discuss, how data type is determined for variable by Python.

Q.2 **Answer the followins briefly.** **[08]**

i) What is the use of input()? What is the datatype of the value, input() return?
ii) What is the use of Id()?
III) What is *frozen binaries*?
Iv) What is the use of the *shift* operators in Python?

Q-3 **Compare the followings. (Any 2)** **[10]**

i) *List* vs. *Tuple* sequence datatypes
ii) *While* loop vs. *for* loop used in Python.
iii) *Dictionary* vs. *Sets* in Python.

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Sessional – II

Subject: Object Oriented Programming using Python
Duration: 1.5 hrs

Date: 03 / 05 / 2023
Maximum Marks: 30

Q.1 **Answer the following. (Any 3)** **[15]**

1) Discuss user defined function in python using suitable example. Discuss why function is referred as First Class Object in python.
2) Explain variable length arguments used with function and elaborate its usefulness with function.
3) *Discuss important features of Object Oriented Programming used in Python.*
4) Define Inheritance. Explain multiple inheritance used in Python with suitable example and also discuss the constructors used in inheritance.

Q.2 **Do as directed. (Any 2)** **[08]**

1) What is the use of decorators in Python and also state the role of @ used with decorator.
2) Compare class method and static method in python.
3) Define Exception. What is the purpose of except in the exception handling technique?

Q.3 **Do as Directed.** **[07]**

1) *Define encapsulation used in Python.*
2) An object may perform different behaviours in different context or a method may perform various tasks, such behaviour is called _____.
3) What is MRO and how does it work?
4) Which method is used to call the base class constructor from the derived class?
5) What is the basic difference between Abstract Base Class and Interface?
6) Which block does always execute in exception handling implementation?
7) What is the use of an *assert* statement.