Punyashlok Ahilyadevi Holkar Solapur University, Solapur.

Question Bank

Subject : Core Java

Class : M. Sc. (Computer Science) (SEM II)

A) Short notes on the following

1. Java user packages.
2. Action Event class.
3. Character Stream
4. Explain execute() method.
5. Method Overriding
6. Thread Priority
7. State the purpose of the following JDBC classes an interfaces.
8. Driver manager
9. Connection
10. Statement
11. Result set
12. batchUpdate()
13. JVM Machine

B) Descriptive Questions

1. Define the term Class and Objects. Discuss the concept of Constructor with suitable example.
2. Define a Stream? Differentiate between a byte oriented and a character oriented stream.
3. What is polymorphism? Explain run-time polymorphism with example.
4. Write a program to demonstrate any five string operations using string class.
5. What is multithreading? Explain the concept of thread priority.
6. Describe the methods used to establish used to establish inter-thread communication in Java.
7. State the difference between interface and abstract class with example.
8. List and explain interface that support for AWT event handling.
9. What is constructor? Explain constructor overloading with example.
10. Differentiate between the statement and PreparedStatement with suitable example.
11. Explain predefined exception with an example.
12. Write a program to implement Multithreading.
13. What is custom exception? Explain with example.

14. What is constructor overloading? Give one example.
15. Explain with suitable example, how to use a try- catch block, Explain with example.
16. Explain steps in creation and implementation of package with example.
17. WAP to read number from user and check it is Prime or not. If given number is negative or zero then throw exception and give message “Enter number greater than zero”.
18. What is difference between String and String buffer and explain 3 methods of String and String buffer class with example.
19. Write the syntax and purpose of any five methods of String class.
20. Describe exception handling in Java.
21. State the purpose of the following JDBC classes and interfaces i) Driver manager ii) Connection iii) Statement
22. Explain how to create a new thread using the class Thread with suitable example.
23. Write a JDBC program to insert information of a student (rollno, name, marks, grade) and display the inserted information.
24. What is ResultSetMetaData? Explain with Example.
25. What is interface? What is use of interface?
26. Explain Abreact Classes with its advantages.
27. How to define a package? How to access, import a package? Explain with example.
28. Method overriding & Overriding
29. Arrays in Java write addition of two 2D array
30. Explain the different types of inheritance in java.
31. Explain Thread priority in java with suitable example.
32. Explain Architecture of JDBC.
33. Explain Thread life cycle in java.
34. What is the use of Layout Managers? Explain GridLayout with example.
35. Explain FileWriter and FileReader class with an example.
36. Define Constructor. Explain the types of constructor.
37. Describe string and StringBuffer classes.
38. What the use of this & super keyword?
39. How to create the user defined exception for calculating ROI for Bank?
40. What is static? How to create static method?
41. Differentiate while and do while loop.
42. Write a code to create the multiple inheritances.
43. Write a program to display two stings with two threads and use thread Priorities for second thread.
44. Write a program to take array data as input from console and sort it in descending order
45. Write a java program to read text from a file and display it on output device.
46. Write a program to copy one text file into another text file.
47. Write a program to demonstrate the implementation of PreparedStatement interface.
48. Differentiate between a constructor and a method
49. What is Thread? Explain different Thread methods.
50. What are the steps in the JDBC connection? Explain in detail.

Punyashlok Ahilyadevi Holkar Solapur University Solapur

M.Sc. (Computer Science) II Sem. IV **Subject** - .NET Technology

Question Bank

Q. Answer the following Questions

1. What is metadata in .NET?
2. Difference between ASP & ASP.Net Application
3. Explain Global.asax
4. Need of Master Pages
5. What is Session State in .NET?
6. Why boxing & unboxing? Justify with example.
7. What is the use of ADO.NET connection string in .NET? Explain with example.
8. What is validation? Explain custom validation with example.
9. What is namespace? How to create and use namespace in .NET?
10. Explain the overview of HTTP Handler & Modules.
11. Compare with example Client-Side versus Server-Side Validation.
12. Explain delegate with example.
13. What is the use of properties in .NET? Give appropriate example.
14. What are the ADO.NET components?
15. What is .NET? Explain ASP.NET Page Life Cycle.
16. What are the Connection object properties and Connection class members?
17. Explain the TextBox, Label and Button Control with example.
18. Write detail description on Microsoft .NET framework.
19. What is the difference between DataReader and DataSet? Explain with example.
20. What is Hidden Variable in .NET? Describe with example.
21. Define Event and Delegate.
22. Short note on Declaration of Class in C#.
23. Declaration of Array in C#.
24. Explain Data types of C#.

25. Explain Web Page in ASP.NET
26. Explain Custom validation with example.
27. Explain DataReader with example.
28. Explain Com interoperability with example.
29. Explain LinkButton with properties.
30. What is the use of Session State in ASP.NET? Explain with example?
31. Describe the delegate with example.
32. What are properties in DOT NET? Explain with example.
33. Explain Life cycle of web page.
34. Why we use IsPostBack event in ASP.NET web page development?
35. How to use RangeValidater in ASP.NET?
36. Explain the architecture of ASP.NET.
37. What is ADO.NET? Explain the components of ADO.NET.
38. What is master page? How to select dynamically master page in ASP.NET application?
39. Write detail description on Microsoft .NET framework
40. What are the differences Between DataReader and DataSet? Explain with example.
41. What is Hidden Variable in .NET? Describe with example.
42. What are the Connection object properties and Connection class members?
43. Explain the TextBox, RadioButton and Button Control with example.
44. What is .NET? Explain ASP.NET Page Life Cycle.
45. Explain any two file operations with example.
46. What is namespace? How to create and use namespace in .NET?
47. Explain the overview of HTTP Handler & Modules.
48. Compare with example Client-Side versus Server-Side Validation.
49. Why boxing & unboxing? Justify with example.
50. What is the use of ADO.NET connection string in .NET? Explain with example.
51. What is validation? Explain custom validation with example.

Q. Write short note on following

1. TextBox Control
2. Namespace
3. Attributes

4. CommandLine Arguments
5. Just In Time Compiler
6. Common Language Runtime
7. Matadata in .NET Framework
8. Programming Features of C#
9. Reflection
10. Math Class
11. EventHandler
12. AutoPostBack
13. DataSet
14. DataAdapter
15. COM and COM+
16. Session State
17. Nested Master Page
18. Custom Validation

Class: M.Sc (CS)-I Sem-II Sub: Artificial Intelligence (SCT 1.2)

Question Bank 2021-2022

Que. No.	Solve following questions.
1.	Define Artificial Intelligence. Discuss various task domains in Artificial Intelligence.
2.	Define Expert System. Explain in detail the process of knowledge acquisition.
3.	Define Game playing. Explain in minimax search procedure with suitable example.
4.	Define Heuristic search technique.Expalin advantages and disadvantages.
5.	Define Semantic Net. Discuss semantic net as weak slot and filler structures.
6.	Describe frame as weak slot and filler structure.
7.	Differentiate between Top-down versus Bottom-up Parsing.
8.	Discuss conceptual dependency as a strong slot and filler structures.
9.	Discuss procedural versus declarative knowledge with suitable example.
10.	Discuss the Characteristics of a production system.
11.	Discuss the following search Technique with the help of an example. Also, discuss the benefits and shortcoming of each. I. Breadth First Search. II. Depth First Search.
12.	Explain AI techniques in detail.
13.	Explain Dempster-Shafer theory.
14.	Explain Expert System Shells.
15.	Explain Forward Versus Backward Reasoning with suitable example.
16.	Explain genetic algorithm in detail.
17.	Explain heuristic search techniques.
18.	Explain ISA relation with suitable example.

19.	Explain partitioned semantic Nets with descriptions.
20.	Explain rule based system with example.
21.	Explain the algorithm of predicate logic resolution.
22.	Explain the Bayes Theorem with the suitable example.
23.	Explain the issues in knowledge representation.
24.	Explain the Minimax search procedure.
25.	What are the need of predicate logic?
26.	Explain the steps in natural language processing.
27.	Explain the steps involved in simple problem solving technique.
28.	How to define a problem as state space search? Discuss it with the help of an example.
29.	List out the advantages of production systems.
30.	State and explain in detail probability and Bayes theorem.
31.	State and explain water jug problem with suitable example.
32.	What are the advantages of Depth First Search?
33.	What are the approaches to knowledge representation?
34.	What are the components of a problem? Explain in detail.
35.	What are the different tasks of Artificial Intelligence? Explain in detail.
36.	What are the different types of agents? Explain in detail.
37.	What are the four properties for knowledge representation? Explain with example.
38.	What are the issues in the design of search programs?
39.	What does Means-Ends Analysis mean?
40.	What is conceptual dependency and list its categories.
41.	What is difference between Local Maxima, plateau and ridge?

42.	What is matching? Explain matching with example.
43.	What is production system? Explain it with an example.
44.	What is propositional logic?
45.	Why there is need of alpha-beta pruning? Explain with the example.

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Question Bank :-

Class :- M.Sc. I Sem. II

Subject :- Computer Communication Network

Q.) Answer the following

1) What is computer network? Explain different uses of computer network?
2) Explain client-server communication in detail?
3) What is internetworks?
4) Distinguish between connection oriented and connectionless service?
5) Explain OSI Reference Model in detail?
6) Explain TCP/IP Reference Model in detail?
7) Explain architecture of Internet?
8) Explain Cyclic Redundancy Check in detail?
9) Explain Simplex Stop-and-Wait Protocol?
10) What is Sliding Window protocol? Explain?
11) Explain different service primitives?
12) Explain Stop and Wait ARQ Protocol?
13) Which are the various design issues for layers?
14) Compare Virtual Circuit and Datagram Subnet?
15) What is Wireless Network? Explain?
16) Explain store-and-forward packet switching techniques?
17) What are the different services provided to the Transport Layer?
18) What is Routing? Explain shortest path routing algorithm?
19) Explain Link State Routing Algorithm?
20) Explain hierarchical Routing Algorithm?
21) Explain Routing for Mobile Host in details?

22) What is Congestion? Explain congestion control algorithm?
23) Explain Leaky Bucket Algorithm?
24) Explain Token Bucket Algorithm?
25) What internetworking? Explain in detail?
26) How Networks can be connected?
27) Explain concatenated virtual circuit?
28) What is connectionless internetworking? Explain?
29) What is Tunneling?
30) Explain internetwork routing?
31) Explain IP Protocol in detail?
32) What is NAT? Explain?
33) Explain ICMP in detail?
34) Explain ARP in detail?
35) Explain Transport Service Primitives?
36) What is Berkeley Sockets? Explain?
37) Explain Addressing mechanism in Transport Layer?
38) Explain Flow Control and Buffering mechanism in Transport layer?
39) What is RPC? Explain RPC mechanism in detail?
40) What is TCP? Explain TCP Segment Header format?
41) What are the Elements of Transport Layers in computer network? Explain any one detail?
42) What is DNS (Domain name System) in detail?
43) What is SMTP (Simple Mail Transfer Protocol)? Explain in detail?
44) What is HTTP (Hyper Text Transfer Protocol)? Explain in detail?
45) Explain WAP (Wireless Application Protocol) in detail?

Q) Write short note on :-

1) LAN
2) MAN
3) WAN
4) Flow control

5) Error Control
6) TCP
7) IP
8) ARPANET
9) Framing Hamming Code
10) Parity
11) Flooding
12) Broadcast Routing
13) AdHoc Network
14) Load Shedding
15) Jitter
16) Fragmentation
17) IP Address
18) Subnet
19) RARP
20) UDP
21) TCP
22) Resource Records
23) HTML
24) Electronic Mail
25) WWW
26) WAP
27) HTTP

Question Bank

M.Sc. II year (Sem-IV)
Subject: Computer Scsience
Paper Title: Data Warehouse and Mining (HCT 4.3)

Q.No	Questions
1	What is Data warehouse? Explain the difference between OLTP and OLAP.
2	Define Data warehouse? Explain various OLAP operations.
3	Describe Data warehouse architecture with well labelled diagram.
4	Explain three-tier Data warehouse architecture with well labelled diagram.
5	What is data cube? Explain different schemas for multidimensional model.
6	Write a short note on Data Marts.
7	What is Enterprise warehouse? Explain with example.
8	What is Virtual warehouse? Explain it.
9	Explain various Back end tools and utilities.
10	Explain importance of OLAP server.
11	What is Metadata Repository? Explain with suitable examples.
12	What is Bitmap Indexing? Explain in detail.
13	What is Binning technique? Explain with example.
14	What is Data cleaning? Explain in detail.
15	Explain Data integration in detail.
16	What is Data transformation?
17	What is Data Reduction? Explain with example.
18	What is data mining? Explain various data mining primitives with example.
19	What is data mining? Explain ‘Task Relevant Data’ as a primitive.
20	What is data mining? Explain ‘kind of knowledge to be mined’ with suitable example.
21	What is data mining? Explain major four types of concept hierarchies.
22	Write a short note on DMQL.
23	Write a short note on Interestingness measures
24	Write a short note on Schema hierarchies
25	Write a short note on Set-grouping hierarchies
26	Write a short note on Operation-derived hierarchies
27	Write a short note on Rule-based hierarchies (Background Knowledge)
28	What is association rule? Explain various applications of association rules.
29	What is Association rule? Explain Market Basket Analysis as a example of it.
30	Explain the procedure of Apriori algorithm with example.
31	Explain how association rules are constructed in multi-level hierarchy.
32	What is Association Rule? Explain ‘mining in multidimensional associations’.
33	Write a short note on Uniform support.
34	Write a short note on Reduced support
35	Write a short note on Market basket analysis
36	Write a short note on Multi-level associations
37	What is classification? Explain different issues regarding with classifications.
38	What is classification? Explain two step process of model construction of classification.
39	Explain decision tree induction method with example.

40	Explain the procedure for decision tree induction method with example.
41	Explain Bayesian classification algorithm with suitable example.
42	Explain Back Propagation method with suitable example.
43	What is mean by Supervised learning? Explain with example
44	What is mean by Unsupervised learning? Explain with example
45	What is mean by Information gain? Explain in detail.
46	What is mean by Supervised learning? Explain with suitable example.
47	What is cluster analysis? Explain different types of data in cluster analysis.
48	What is cluster analysis? Explain various typical requirements of clustering in data mining.
49	Explain k-means algorithm with suitable example.
50	Explain k-medoid algorithm with suitable example.
51	Explain different types of hierarchical clustering methods.
52	Explain Agglomerative hierarchical clustering method with example.
53	Explain Divisive hierarchical clustering method with example.
54	Explain various applications of Data mining.
55	Explain new trends in Data mining.

M.Sc.I Year (Sem-II)
Subject : Computer Science
Paper Title: Office Automation (OET 2.1)

Q.No	Question
1	What is Computer? Explain various applications of Computer.
2	Define Computer. Explain various advantages of computer.
3	What is computer? Explain characteristics of computer.
4	What is hardware? Explain with suitable example.
5	What is software? Explain different types of software.
6	What is software? Explain system software with suitable example.
7	Explain the use of following icons: i) Recycle Bin ii) My Documents iii) Network neighborho0d iv) My Computer
8	What is Operating System? Explain various characterstics of Windows operating system.
9	Explain various features of Windows operating system
10	Explain the use of following shortcut keys with example in MS-Word i) Ctrl + S ii) Ctrl + C iii) Ctrl + X iv) Ctrl + V
11	Explain different commands on paragraph setting.
12	Explain the procedure for creating table in MS-Word and formatting commands.
13	What is mail merge? Explain the procedure for mail merge facility.
14	What is digital signature? How can be added digital signature in MS-Word?
15	What is Header and Footer? Explain the use of it with suitable example.
16	What is the procedure for creating web pages in MS-Word? Explain in detail.
17	What do you mean by Bullets and Numbering? Explain with example.
18	What is the use of Formatting tool bar? Explain any three operations of formatting on document.
19	Discuss various alignments in MS Word?
20	What is text formatting? Explain with example
21	How to apply bullets and numbering in MS Word?
22	What is table? Mention the advantages of table?
23	What is mail merge? Explain the Steps of mail merge?
24	How to print page range in MS Word?

25	What is the procedure of inserting Symbols in an MS Word document?
26	Write down the keyboard shortcuts for the following functions:- a) Making fonts bold: b) Making fonts underlines: c) Making fonts italic: d) Increasing font size: e) Making a paragraph right –aligned:
27	How to print page range in MS Word?
28	What are the uses of Header and Footer in MS Word?
29	How can alphabetical sorting order in Microsoft word ? Explain with example.
30	What is mean by hyperlink? Explain it with example.
31	What are the main features of MS Word?
32	What are the advantages of MS Word?
33	Explain the procedure of creating watermark in MS-Word.
34	What is Microsoft Excel? Explain various features of Excel.
35	How many data formats are available in Excel? State and explain any four of them.
36	What are charts in MS-Excel? Explain basic types of charts and their uses.
37	State and explain any four useful functions in Excel.
38	What is IF function in Excel? Explain with syntax and example.
39	How would you format a cell? What are the options?
40	What is presentation? Explain the procedure for creating new presentation.
41	Explain various formatting on text in power point presentation.
42	Explain different types of views in power point presentation.
43	How we can create reports in MS-Access? Explain with example.
44	What is mean by Importing? How data can be imported from other databases to excel.
45	What is transition effect? Explain different types of transition effects.
46	Explain the procedure to add header and footer in MS-Power point.
47	Explain the procedure to draw an object in MS-Power point.
48	What is Report? Explain different types of reports.
49	What is the procedure to find specific information from given table? Explain with example.
50	Explain procedure for creating quiries in MS-Access.

Question Bank

SOFT COMPUTING
M. Sc. Sem IV Computer Science

Introduction to ANN and Backpropagation (Unit I)

1. Define Artificial Neural Network. Discuss with examples why machine learning is important.
2. Define the biological motivation for studying ANN.
3. State the concept of Artificial neural network.
4. Describe with an example Neural network representation.
5. List out the characteristic to which the back propagation algorithm is used.
6. What are the types of problems in which Artificial Neural Network can be applied.
7. Explain the concept of a Perceptron with a neat diagram.
8. What do you mean by Gradient Descent?
9. Write the algorithm for Back propagation.
10. Derive the Backpropagation rule considering the training rule for Output Unit weights and Training Rule for Hidden Unit weights.
11. Explain how to learn Multilayer Networks using Backpropagation Algorithm.
12. Explain the multi-layer perceptron model with a neat diagram.

Fuzzy Set (Unit II)

1. What do you mean by Fuzzy Set?
2. What do you mean by Crisp Set?
3. Differentiate between Fuzzy Set vs Crisp Set?
4. What do you mean by Alpha cut?
5. Discuss various theorem for additional properties of Alpha cut.
6. What is the role of membership function in fuzzy logic?
7. What is meant by universe of discourse?
8. Define fuzzification.
9. Define classical set.
10. Discuss in detail Classical set versus Fuzzy set vs Crisp set.

Fuzzy Relations (Unit III)

1. What are the rules based format used to represent the fuzzy information?
2. State two assumptions in fuzzy control system design.
3. Calculate the several operation of the fuzzy set of below given set-
   A = {(1/2) + (0.5/3) + (0.3/4) + (0.2/5)},
   B = {(0.5/2) + (0.7/3) + (0.2/4) + (0.4/5)}
4. Describe fuzzy relation.
5. Explain the operation of fuzzy sets with a suitable example.
6. Write about conditional fuzzy proposition and unconditional fuzzy proposition.

7. Define defuzzification and explain the different defuzzification methods.
8. Explain the terms
   a.Fuzziness
   b.Power set.
   c.Union of two sets.
   d.Complement of two sets.
   e.Difference of two set
9. Explain the technique “fuzzy logic blood pressure during anesthesia” in a brief manner.
10. State and explain Fuzzy Compatibility Relation.

Genetic Algorithm (Unit IV)

1. How hypothesis in Genetic Algorithm is represented?
2. Describe about Genetic Algorithm.
3. What are the advantages of genetic algorithm?
4. Examine about the Baldwin Effect.
5. Distinguish betweencrossover and mutation.
6. Write short notes on crowding.
7. How to perform genetic programming?
8. Illustrate the Lamarckian Evolution.
9. Summarize about the Schema in GA.
10. Write about program tree representation in genetic programming.

Punyashlok Ahilyadevi Holkar Solapur University

Question Bank

M. Sc. Sem IV Computer Science

MACHINE LEARNING

Introduction to Machine Learning (Unit I)

1. Define Machine Learning. Discuss with examples why machine learning is important.
2. Discuss with examples some useful applications of Machine Learning.
3. Explain how some areas/disciplines that influenced the Machine Learning.
4. What are different types of Machine Learning? Explain the important features that are required to well–define a process based on type.
5. Define learning program for a given problem. Describe the following problems with respect to Tasks, Performance and Experience:
    a. Checkers Learning Problems
    b. Handwritten Recognition Problem
    c. Robot Driving Learning Problem
6. Describe in detail all the steps involved in designing a learning system.
7. Discuss the perspective and issues in machine learning.
8. What do you mean by variance and bias?
9. What are the various problem characteristics of Learning?
10. Discuss machine learning applications with suitable example.

Supervised Learning (Unit II)

1. Explain the following with examples:
    a. Decision Tree
    b. Decision Tree Learning
    c. Decision Tree Representation.
2. What are the characteristics of the problems suited for decision tree learning?
3. Explain the concepts of entropy and information gain.
4. Define (i) Prior Probability (ii) Conditional Probability (iii) Posterior Probability
5. Define Bayesian theorem? What is the relevance and features of Bayesian theorem? Explain the practical difficulties of Bayesian theorem.
6. Discuss Maximum Likelihood and Least Square Error Hypothesis.
7. What is conditional Independence?
8. Explain Naïve Bayes Classifier with an Example.
9. What do you mean by KNN?
10. What are Bayesian Belief nets? Where are they used?
11. What is Random Forest Algorithm?

12. Explain Bayesian belief network and conditional independence with example.
13. Discuss SVM in detail with suitable example

Un-Supervised Learning (Unit III)

1. Explain the following
    1. Matrix completion
    2. Generative Models
2. Define clustering. What are the different types of clustering explain in detail?
3. Discuss in detail PCA & its kernel PCA with suitable example?
4. How Matrix factorization works in PCA. Explain in detail?
5. Explain in detail the concept of Kernel and K- Means?
6. Give a detail note on Mixture models in machine Learning.
7. Explain PCA and its process with their applications.
8. What do you mean by Dimesion Reduction?
9. Discuss in details Unsupervised Learning with suitable example.
10. Expain the various steps of K- Mean Clustering algorithm ?

Re-Enforcement Learning (Unit IV)

1. Explain the basic definitions of sampling theory.
2. Explain the binomial distribution in detail.
3. Explain the nominal distribution in detail.
4. What is instance based learning?
5. Define Central Limit Theorem
6. Explain the concept of Bagging with its uses?
7. Discuss Linear Discriminate Analysis algorithm with neat sketch?
8. Explain boosting and ADA boosting algorithm with neat sketch?
9. What is reinforcement learning explain its detailed concepts?
10. Explain the concept of Bagging with its uses?

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SOFT COMPUTING
M. Sc. Sem IV Computer Science

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M.Sc.- I (Semester - II) (CBCS) Examination-2022
Computer Science
HCT 2.2: Python Programming
Question SET

1. Create a pandas DataFrame and show the functionalities of Selection of row, Addition of row and Deletion of row.
2. Create a pandas DataFrame and show the functionalities of Selection of Column, Addition of Column and Deletion of Column.
3. Define dict. Explain any four functions dict.
4. Define List. Explain any four functions of list.
5. Define module. Explain how to create and import module.
6. Define tuple. Explain any four functions of tuple.
7. Design a GUI that uses Frame, Label, Entry, Checkbutton, Radiobutton, Spinbox and Button widgets.
8. Explain anonymous (lambda) function with example.
9. Explain any four functions of math module.
10. Explain different GUI Layout management methods.
11. Explain different GUI widgets like Frame, Label, Entry, Checkbutton, Radiobutton, Spinbox and Button.
12. Explain Django templates to create a template, modify view and change settings.
13. Explain Django templates.
14. Explain Django web framework.
15. Explain function decorators and chained decorators with example.
16. Explain keyword argument and variable length arguments in function.
17. Explain multilevel inheritance with example.
18. Explain multiple inheritance with example.
19. Explain the creating a Thread by creating a Sub Class to Thread Class.
20. Explain the difference between list and tuple.
21. Explain the different steps for connecting python application to database.
22. Explain the different types of methods in python.
23. Explain the different ways of creation of a thread.
24. Explain the different ways of creation of thread with example.

25. Explain the functionalities of random module.
26. Explain the python built-in functions map, reduce and filter with example.
27. Explain the python built-in functions map, zip, reduce and filter with example.
28. Explain the use of raise keyword with example.
29. Explain the use of try, except, else, finally keywords in exception handling.
30. Explain the various directory manipulation operations.
31. Explain time module in python.
32. Explain user defined exception with example.
33. What are Canvas Container? Explain how to draw line, oval, rectangle and polygon on Canvas container.
34. What are the features of pandas module. Write a difference between pandas Series and DataFrame.
35. What is Data Visualization? Create a Pie Chart to visualize the data of Students as Course_name and No. of Students Enrolled.
36. What is DataFrame? Explain how to create a DataFrame from python list.
37. What is DataFrame? Write the features of DataFrame. Explain how to create a Data Frame from an Excel Spreadsheet.
38. What is DataFrame? Write the features of DataFrame. Explain how to create a DataFrame from python Dictionary.
39. What is Generator? Write a program to demonstrate the use of generator.
40. What is Histogram? Create a Histogram to visualize the data of students as Marks on X-axis and No. of Students on Y-axis.
41. What is inheritance? Explain multilevel inheritance with suitable example.
42. What is numpy module? Explain different operations on numpy array.
43. What is numpy module? Explain indexing and slicing operations on numpy array.
44. Write a python application to demonstrate difference between instance method, class method and static method.
45. Write a python application to insert and display Book details like Acc_no, Title, Author, Publication and Price using MySQL database.
46. Write a python application to insert Student details like roll_no, name, address and marks and update the marks of student having roll_no 505, display entire result using MySQL database.

47. Write a python program to demonstrate communication between threads using wait() and notify() methods.
48. Write a simple python program to read the content from binary file and write to another file.
49. Write a simple python program to read the content from one file and write to another file.
50. Write about various types of file opening modes.