C-3501

M.Sc. DEGREE EXAMINATION, DECEMBER-2021

(FOR AFFILIATED COLLEGES)

(MATHEMATICS)

(FIRST SEMESTER)

21PMATC11 - ALGEBRA - I

Time : 3 Hours   Maximum : 75 Marks

SECTION – A   (10 × 2 = 20)

Answer ALL questions

1. Define group.

2. What is order of a group.

3. What is meant by invariants of G.

4. State - subgroups G(s) of any integer s.

5. Define content of the polynomial.

6. What is meant by primitive polynomial.

7. What is inner product space.

8. Define index of nilpotent transformation.

9. State Hermitian transformation.

10. What is normal transformation.

SECTION – B   (5 × 5 = 25)

Answer ALL questions

11.   a) If $O(G) = p^n$, where p is the prime number , then prove that $Z(G) \neq \{e\}$

(OR)

        b) State and Prove Cauchy Theorem.

12.   a) Prove that every finite abelian group is the direct product of cyclic groups.

(OR)

        b) If G, G' are isomorphic abelian group, then prove that for every integer s, $G(s)$ and $G'(s)$ are isomorphic.

13.   a) State and prove Gauss lemma.

(OR)

        b) If $f(x)$ and $g(x)$ are primitive polynomials, then prove that $f(x).g(x)$ is also a primitive polynomial.

14.   a) If $u, v \in V$, then prove that $|(u, v)| \leq \|u\|\|v\|$

(OR)

b) Show that two nilpotent linear transformation are similar if and only if they have the same invariants.

15. a) If $T \in A(V)$ is such that $(vT, v) = 0$ for all $v \in V$, then show that $T = 0$.

(OR)

b) If N is normal and $AN = NA$, then prove that $AN^* = N^*A$

SECTION – C   ($3 \times 10 = 30$)

Answer any THREE questions

16   State and prove Sylow's theorem for abelian groups.

17.   Let G be a group and suppose that G is the internal direct product of $N_1, N_2, ...N_n$. Let $T = N_1 \times N_2 \times .... \times N_n$, then prove that G and T are isomorphic.

18.   State and prove division algorithm.

19   Prove that there exists a subspace W of V, invariant under T, such that $V = V_1 \oplus W$.

20.   If N is a normal linear transformation on V, prove that there exists an orthonormal basis, consisting of characteristic vectors of N, in which the matrix of N is diagonal.

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Register Number:

Name of the Candidate:

C-3502

M.Sc. DEGREE EXAMINATION, DECEMBER-2021
(FOR AFFILIATED COLLEGES)
(MATHEMATICS)
(FIRST SEMESTER)
21PMATC12 - REAL ANALYSIS –I

Time : 3 Hours   Maximum : 75 Marks

SECTION – A $(10 \times 2 = 20)$

Answer ALL questions

1.   Define bounded variation.

2.   State additive property of total variation.

3.   Write any two properties of Riemann Stieltjes integral.

4.   Define step function.

5.   State sufficient condition for existence of the Riemann integral.

6.   State Bonnet's theorem.

7.   What is the difference between absolute and conditional convergent?

8.   Find the Cesaro sum for $a_n = z^n, |z| =, z \neq 1$.

9.   Give an example for a sequence of continuous function with a discontinuous limit function.

10.   State Weierstrass M - test.

SECTION – B $(5 \times 5 = 25)$

Answer ALL questions

11.   a)   If f is monotonic on [a, b] then prove that the set of discontinuous f is countable.

(OR)

b)   Let f be of bounded variation on [a, b]. Let V be defined on [a, b] as follows :

$V(x) = V_f(a,x)$ if $a < x \leq b, V(a) = 0$ then show that V is an increasing function on [a,

b] and V-f is an increasing function on [a, b] .

12.   a)   If $f \in R(\alpha)$ on [a, b] then prove that $\alpha \in R(f)$ on [a, b] and

$$\int_a^b f(x)d\alpha(x) + \int_a^b \alpha(x)df(x) = f(b)\alpha(b) - f(a)\alpha(a)$$

(OR)

b)   State and prove Euler's summation formula.

13.   a)   If f is a continuous on [a, b] and if α is a bounded variation on [a, b] then show that

$f \in R(\alpha)$ on [a, b].

(OR)

b) State and prove first mean value theorem for Riemann Stieltjes integral.

14. a) Let $\sum a_n$ be a series of complex terms whose partial sums form a bounded sequence. Let $\{b_n\}$ be a decreasing sequence which converges to 0 then prove that $\sum a_n b_n$ converges.

(OR)

b) Assume that $a_n > 0,$ then prove that the product $\prod(1 + a_n)$ converges if and only if the series $\sum a_n$ converges.

15. a) Assume that $f_n \to f$ uniformly on S. If each f_n is continuous at a point c of S then prove that the Limit function f is also continuous at c.

(OR)

b) Assume that $\lim_{n\to\infty} f_n = f$ on [a, b]. If $g \in R$ on [a, b], define $h(x) = \int_a^x f(t)g(t)dt,$

$h_n(x) = \int_a^x f_n(t)g(t)dt$ then show that $h_n \to h$ uniformly on [a, b].

SECTION – C   (3 × 10 = 30)

Answer any THREE questions

16. Let f be of bounded variation on [a, b]. if $x \in [a,b]$, let $V(x) = V_f(a,x)$ and put $V(a) = 0$ then prove that every point of continuity of f is also a point of continuity of V. Also prove the converse.

17. Assume $f \in R(\alpha)$ on [a, b] and assume that α has a continuous derivative α' on [a, b] then show that the Riemann integral $\int_a^b f(x)\alpha'(x)dx$ exists and we have

$\int_a^b f(x)d\alpha(x) = \int_a^b f(x)\alpha'(x)dx$

18. Let α be of bounded variation on [a, b] and assume that $f \in R(\alpha)$ on [a, b] then prove that $f \in R(\alpha)$ on every subinterval [c, d] of [a, b].

19. Assumed that $\sum_{n=0}^{\infty} a_n$ converges absolutely and has sum A and suppose $\sum_{n=0}^{\infty} b_n$ convergence with sum B. Then show that the cauchy product of these two series converges and has sum AB.

20. State and prove Dirichlet's test for uniform convergence.

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M.Sc. DEGREE EXAMINATION, DECEMBER-2021
(FOR AFFILIATED COLLEGES)
(MATHEMATICS)
(FIRST SEMESTER)
21PMATE14 - 3. GRAPH THEORY

Time : 3 Hours   Maximum : 75 Marks

SECTION – A   (10 × 2 = 20)

Answer ALL questions

1. State the Dijkstra's Algorithm.

2. Prove that every non trivial tree has at least two vertices of degree one.

3. If G is a block with $v \geq 3$, then prove that any two edged of G lie on a common cycle.

4. Define :Hamiltonian Graph.

5. Let M be a matching and K be a covering such that $|M| = |K|$. Then Prove that M is a maximum matching and K is a minimum covering.

6. State Vizing's Theorem.

7. Prove that a set $S \subseteq V$ is an independent of G if and only if $V \setminus S$ is a covering of G.

8. Prove that every critical graph is a block.

9. Give an example for a planet graph and its dual.

10. If G is a plain graph, then prove that $\sum_{f \in F} d(f) = 2\varepsilon$

SECTION – B   (5 × 5 = 25)

Answer ALL questions

11. a) Prove that $\sum_{v \in V} d(v) = 2\varepsilon$

(OR)

b) Prove that an edge e of G is a cut edge of G if and only if e is contained in no cycle of G.

12. a) Prove that the graph is $H_{m,n}$ is m-connected.

(OR)

b) Prove that a non empty connected graph is Eulerian if and only if it has no vertices of odd degree.

13. a) Prove that every 3- regular graph without cut edges has a perfect matching.

(OR)

b) If G is bipartite, then prove that $\chi' = \Delta$

14. a) If $\delta > 0$, then prove that $\alpha' + \beta' = v$

(OR)

b) Prove that in a critical graph, no vertex cut is a clique.

15. a) Prove that K_5 is non planner.

(OR)

b) If two bridges overlap, then prove that either they are skew or else they are equivalent 3- bridges.

SECTION – C $(3 \times 10 = 30)$

Answer any THREE questions

16 Prove that $\tau(K_n) = n^{n-2}$.

17. Prove that $\kappa \leq \kappa' \leq \delta$

18. State and prove Berge theorem.

19 State and prove Dirac theorem on k-critical graph.

20. State and prove Kuratowski's theorem.

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Register Number:

Name of the Candidate:

C-3503

M.Sc. DEGREE EXAMINATION, DECEMBER-2021
(FOR AFFILIATED COLLEGES)
(MATHEMATICS)
(FIRST SEMESTER)
21PMATC13 - ORDINARY DIFFERENTIAL EQUATIONS

Time : 3 Hours   **Maximum : 75 Marks**

<u>**SECTION – A**</u>   **(10 × 2 = 20)**

Answer ALL questions

1. Consider the equation $y^{11} + y^1 - 6y = 0$ and compute the solution ϕ satisfying $\phi(0) = 1, \phi^1(0) = 0.$

2. Write Harmonic Oscillator equation and solve it.

3. Check whether the function defined on linearly independent or dependent? Why?

4. $\phi_1(x) = 1, \phi_2(x) = x, \phi_2(x) = x^3.$

5. What is initial value problem?

6. Define analytic function.

7. What is nth Legendre Polynomial?

8. What is regular singular point with example?

9. Define Bessel function of zero order.

10. Solve $y^1 = y^2$

<u>**SECTION – B**</u>   **(5 × 5 = 25)**

Answer ALL questions

11. a) Let ϕ_1, ϕ_2 be two solutions of L(y)=0 on an interval I, and let x_0 be any point in I. Then ϕ_1, ϕ_2 are linearly dependent on I if $W(\phi_1, \phi_2)(x_0) \neq 0.$

(OR)

    b) Find the solution for $y^{11} - y^1 - 2y = e^{-x}.$

12. a) Consider the equation $y^{111} - 4y^1 = 0.$ compute three linearly independent solutions and Wronskian of the solutions. Find the solution ϕ satisfying $\phi(0) = 0, \phi^1(0) = 1, \phi^{111}(0) = 0.$

(OR)

    b) Using annihilator method, find a particular solution of $y^{11} + 9y = x^2 e^{3x}.$

13. a) There exists n linearly independent solutions of $L(y) = 0$ on I.

(OR)

b) Find two linearly independent power series solution of $y^{11} + y = 0$

14. a) Solve $x^2 y^{11} + xy^1 + y = 0$ for $x \neq 0$

(OR)

b) Show that -1 and 1 are regular singular points for the Legendre equation

$(1 - x^2)y^{11} - 2xy^1 + \alpha(\alpha + 1)y = 0$

15. a) Solve $y^1 = 3 y^{\frac{2}{3}}$

(OR)

b) A function ϕ is a solution of the initial value problem $y^1 = f(x, y)$, $y(x_0) = y_0$, on an

interval I iff it is a solution of the integral equation $y = y_0 + \int_{x_0}^{x} f(t, y)\, dt$ on I.

SECTION – C   (3 × 10 = 30)

Answer any THREE questions

16   Let ϕ be any solution of $L(y) = y^{11} + a_1 y^1 + a_2 y = 0$ on an interval I containing a point x_0.

Then for all x in I $\quad \|\phi(x_0)\| e^{-k|x-x_0|} \leq \|\phi(x)\| \leq \|\phi(x_0)\| e^{k|x-x_0|}$, where

$\|\phi(x)\| = \left[|\phi(x)|^2 + |\phi^1(x)|^2 \right]^{\frac{1}{2}}$, $k = 1 + |a_1| + |a_2|$

17. Compute the solution ψ of $y^{111} + y^{11} + y^1 + y = 1$, which satisfies

$\psi(0) = 0,\ \psi^1(0) = 1,\ \psi^{11}(0) = 0$

18. State and prove Existence theorem for Analytic Coefficients.

19   (a) use the formula for $J_\alpha(x)$ to show that $(x^\alpha J_\alpha)^1 (x) = x^\alpha J_{\alpha-1}(x)$

(b) Prove that $(x^{-\alpha} J_\alpha)^1 (x) = -x^{-\alpha} J_{\alpha+1}(x)$

20.   Let M,N be two real-valued functions which have continuous first partial derivatives on some

rectangle $R: |x - x_0| \leq a$, $|y - y_0| \leq b$. Then the equation $M(x, y) + N(x, y)y^1 = 0$ is exact in R

if $\dfrac{\partial M}{\partial y} = \dfrac{\partial N}{\partial x}$ in R.

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M Sc. DEGREE EXAMINATION, DECEMBER 2022

(FOR AFFILIATED COLLEGES)

(NEW REGULATION 2022 ONWARDS)

COMPUTER SCIENCE

FIRST YEAR - FIRST SEMESTER

22PCSCC11 DESIGN AND ANALYSIS OF ALGORITHMS

Time : 3 Hours

Maximum : 75 Marks

PART – A

10 x 2 = 20 Marks

Answer All Questions

1. Define Space Complexity

2. What is Binary Tree?

3. List out some example of divide and conquer methods.

4. What is the use of Quick sort?

5. Give some application of Binary trees.

6. What is Spanning tree?

7. Define Multistage graph.

8. What is String editing?

9. Define Back tracking.

10. What do you mean Hamiltoniyan cycles?

PART – B

5 x 5 = 25 Marks

Answer All Questions

11. a) Write short notes on Time complexity with an example.

    [OR]

    b) Explain in detail about Union and find operation in sets with Example.

12. a) Write down the Merge sort algorithm and explain it with Example.

    [OR]

    b) Discuss in detail about stassen's matrix multiplication algorithm with example.

13. a) Illustrate in detail about Tree vertex splitting algorithm with example.

    [OR]

    b) Describe about the Single SourceShortest path.

14. a) Write short notes on post order traversal in graph with example. .

    [OR]

    b) Discuss in detail about the Optimal Binary search tree with example.

15. a) Explain in detail about the sum of subsets with example.

[OR]

b) Write short notes on Cost search algorithm with example.

<center>**PART – C**   **Marks: 3 x 10 = 30**</center>

<center>**(Answer Any Three Questions)**</center>

16. Discuss in detail about insertion and deletion fromBinary search tree with example

17. Describe in detail about finding the maximum and minimum with example.

18. Explain in detail about Kruskal algorithm of Minimum cost spanning tree with example..

19. Narrate the concept of Techniques for graph with example.

20. Summarize in detail about the back tracking solution to the 0/1 knapsack problem.

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PART – A   10 x 2 = 20 Marks

Answer All Questions

1. Write the general format of tuple relational calculus.

2. What is meant by determinant and dependent of FD?

3. Why the BCNF is stronger than 3NF?

4. What is the purpose of view in SQL?

5. What is meant by pipelining evaluation?

6. What is the major difference between hash-join and merge join?

7. What is the lock point of transaction?

8. What is meant by optimistic concurrency control?

9. What is the purpose of DTD?

10. What are the two recovery procedure?

PART - B   5 x 5 = 25 Marks

Answer All Questions

11. a) Explain the inference rules of functional dependency.

(OR)

b) Write short note on domain relational calculus.

12. a) Explain the non-loss decomposition with an example.

(OR)

b) Explain the basic constraints in SQL.

13. a) Explain the distinction between serial schedule and serializable schedule.

(OR)

b) Explain the concept of hash join.

14. a) Describe two-phase locking protocol

(OR)

b) What are the three-phases of optimistic concurrency control? Explain.

15. a) Explain the structure of XML data.

(OR)

b) Discuss various types of failures in database systems

PART - C   Marks: 3 x 10 = 30

(Answer Any Three Questions)

16. Explain the fundamental operators in Relational algebra.

17. Explain the aggregate functions with the Grouping clause.

18. Illustrate the two methods for evaluation of expression.

19. Discuss the various methods of Handling Deadlock.

20. Explain the log based recovery

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C-9102

M.Sc. DEGREE EXAMINATION, DECEMBER 2022

(FOR AFFILIATED COLLEGES)

(NEW REGULATION 2022 ONWARDS)

COMPUTER SCIENCE

FIRST YEAR - I SEMESTER

22PINTC13/22PCSCC12 -ADVANCED JAVA PROGRAMMING

(Common with M.Sc. IT)

Time : 3 Hours   Maximum : 75 Marks

PART – A   10 x 2 = 20 Marks

Answer All Questions

1. What are the rules for declaring a variable?

2. Why Java is platform independent?

3. What is multithreading in Java?

4. Define Class.

5. What is the purpose of Finalize method?

6. Write the syntax for Label.

7. What is JDBC Driver?

8. List the various AWT controls.

9. Expand the following : (a) RMI   (b) JDBC

10. What is a Socket?

PART - B   5 x 5 = 25 Marks

Answer All Questions

11. a)   Explain the basic concepts of Object Oriented Programming.

[OR]

b) . Write a Java program to check whether the person is eligible for voting using control statement.

12. a)   Write a program to illustrate user defined error handling mechanism

[OR]

b)   With a suitable program brief about Array List and Linked List.

13. a) What are the stages involved in an Applet Life Cycle? Write a program for the same.

[OR]

b) Write an applet program using Graphics class methods.

14. a) Explain the life cycle of a Servlet with a program

[OR]

b) What is difference between GenericServlet and HttpServlet?

15. a) Explain Swing features and any five swing components.

[OR]

b) What are the JDBC API components?

PART - C   **3 x 10 = 30 Marks**

(Answer Any Three Questions)

16. List down the various types of operators used in Java with a program

17. Explain in detail the various Built-In Exceptions with a program.

18. Give your views about Layout managers and explain with suitable programs any two Layouts.

19. What are the steps involved in JDBC/ODBC connectivity with a program.

20. Give a Brief note on RMI.

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Register Number:

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M.Sc.DEGREE EXAMINATION, DECEMBER 2022

(FOR AFFILIATED COLLEGES)

(NEW REGULATION 2022 ONWARDS)

COMPUTER SCIENCE

FIRST YEAR - I SEMESTER

22PCSCE16-3 THEORY OF COMPUTATION

Time : 3 Hours

Maximum : 75 Marks

PART – A

10 x 2 = 20 Marks

Answer All Questions

1. What do you mean by induction method for proving theorems?

2. What are the two types of finite automata?

3. State closure property.

4. When will you said two languages are equivalent?

5. Define Parse Tree.

6. What do you mean by context free grammar?

7. What do you mean by Recursively Enumerable?

8. Give the normal form of CFG.

9. State recursion.

10. Define an un decidable problem

PART - B

5 x 5 = 25 Marks

Answer All Questions

11. a) Explain induction to normal proof.

[OR]

b) Discuss about Non-Deterministic Finite Automata.

12. a) How to minimize automata?

[OR]

b) Give the conversion between regular expression and finite automata.

13. a) Write down the Ambiguity in grammars and languages.

[OR]

b) Explain the equivalence of Push down automata.

14. a) State and prove pumping lemma for CFL.

[OR]

b) Write a short note on turing machine.

15. a) Discuss Post's Correspondence Problem.

[OR]

b) Explain about an un-decidable problem about turing machine.

PART - C

3 x 10 = 30 Marks

(Answer Any Three Questions)

16. How to convert NDFA from DFA?

17. Write down the properties of regular languages.

18. Explain Deterministic Push down Automata.

19. Discuss the programming techniques for turing machine.

20. Explain the classes P and NP.

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M.Sc. DEGREE EXAMINATION, DECEMBER -2022

(FOR AFFILIATED COLLEGES)

(NEW REGULATION 2022 ONWARDS)

COMPUTER SCIENCE

FIRST YEAR – I SEMESTER

22PINTO17-1/22PCSCO17-1 – FUNDAMENTALS OF COMPUTER APPLICATION

(Common with M.Sc. IT)

Time : 3 Hours   Maximum : 75 Marks

PART – A   10 x 2 = 20 Marks

Answer All Questions

1. What is Computer?

2. What is Information?

3. Give any FOUR examples of operating systems.

4. What is GUI?

5. What is MS-Word?

6. List any TWO formatting options used in Text.

7. What is Excel?

8. Define cell in the worksheet.

9. Name any FOUR types of presentation software.

10. Give any FOUR features of presentation software.

PART - B   5 x 5 = 25 Marks

Answer All Questions

11. a) Explain the various parts of a Desktop computer.

                                    [OR]

    b) List and explain the applications of IECT.

12. a) Explain the rules for naming files in DOS.

                                    [OR]

    b) Explain briefly the Desktop and its elements.

13. a) Explain any FIVE features of processing.

                                    [OR]

    b) List and explain any TWO editing commands in MS-Word.

14. a) Explain the data types that can entered in Excel.

[OR]

b) Explain the steps of printing a spreadsheet.

15. a) Explain the basics of Presentation software.

[OR]

b) Explain the steps to create a slideshow in PowerPoint.

PART - C   Marks: 3 x 10 = 30

(Answer Any Three Questions)

16   List and explain any FIVE input devices used in computer.

17   List and explain any TEN DOS commands with examples.

18   Explain the steps to create a new document in MS-Word.

19   Explain the various elements of an Excel Window in detail.

20   Describe the presentation and preparation of slides in PowerPoint.

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M.Sc. DEGREE EXAMINATION, DECEMBER 2022

(FOR AFFILIATED COLLEGES)

COMPUTER SCIENCE

FIRST YEAR - II SEMESTER

21PCSEC21 - ADVANCED ENTERPRISE JAVA PROGRAMMING

Time : 3 Hours   Maximum : 75 Marks

PART – A   10 x 2 = 20

Answer All Questions

1. List out any 5 convertDateTime Tag Attributes.

2. List out all the standard validator classes and the tags that allow you to use the validators from the page.

3. What is Sturts Tiles?

4. List out the elements of the Tiles Definition configuration file.

5. Define Entity Bean.

6. What is a message-driven bean?

7. List out the three basic inheritance mapping strategies.

8. Mention the purpose of Order by clause with an example.

9. Define Bean Scoping.

10. What is Dependency Injection?

PART – B   5 x 5 = 25

Answer All Questions

11. a) Define JSP and explain the life cycle of JSP.

    [OR]

    b) Write short notes on Standard Validators.

12. a) Write down the six basic steps in using Struts.

    [OR]

    b) Write short notes on FormBeans in Struts.

13. a) Discuss on Session Bean.

    [OR]

    b) Illustrate Online Enterprise Bean Features.

14. a) Describe Component Mapping.

    [OR]

    b) Write short notes on Named SQL Queries.

15. a) Write short notes on Inversion of Control.

[OR]

b) Discuss on Resource Integration.

PART – C 3 x 10 = 30

(Answer Any Three Questions)

16. Illustrate Java Beans components.

17. Explain Struts Tiles.

18. Describe Container-Managed Transactions.

19. Discuss on Association Mapping.

20. Explain AOP with Spring Framework.

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M.Sc. DEGREE EXAMINATION, DECEMBER 2022
(FOR AFFILIATED COLLEGES)

COMPUTER SCIENCE

FIRST YEAR – II SEMESTER

21PCSEC23 - WEB APPLICATION USING C#.NET

Time : 3 Hours

Maximum : 75 Marks

Part – A

10 x 2 = 20 Marks

Answer All Questions

1. Define bin Directory.

2. Which tag is used for HTMLAnchor?

3. List out some control prefixes.

4. Write any two Validator Control?

5. What is mean by Encapsulation?

6. Define objects.

7. List out some Attributes for Design-Time Support.

8. Define User Controls.

9. Mention the types of SQL statements.

10. How will you Accessing the table from the Database?

PART - B

5 x 5 = 25

Answer All Questions

11. a) Mention some ASP.NET File Types. Explain

[OR]

b) Discuss about Improving Currency Converter.

12. a) Explain the Basic Web Control Class.

[OR]

b) Write a short note on Validation with an example.

13. a) Elucidate on Component Jargon.

[OR]

b) Write down the steps for Creating a simple component.

14. a) Describe the concept of Integrated User Controls with an example.

[OR]

b) Discuss about Consuming a Custom Control.

15. a) What are the steps to be followed for Selecting Multiple Tables? Explain.

[OR]

b) Discuss about XML Validation.

PART - C   3 x 10 = 30

(Answer Any Three Questions)

16. Explain in detail about simple page applet with an example.

17. Describe the concept of Rich Controls with an example.

18. Explain the Simple Database Components with an example.

19. Describe the concept of Deriving Custom Controls.

20. Discuss about Updating Data with an example.

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M Sc. DEGREE EXAMINATION, DECEMBER 2022

(FOR AFFILIATED COLLEGES)

COMPUTER SCIENCE

SECOND YEAR - III SEMESTER

21PCSEC31 DISTRIBUTED OPERATING SYSTEM

Time : 3 Hours   Maximum : 75 Marks

PART – A   10 x 2 = 20

Answer All Questions

1.   What are Operating System Services?

2.   Explain Simple Batch System?

3.   What are Pages and Frames?

4.   What is Demand Paging?

5.   What are necessary conditions for Deadlocks?

6.   What is Access control?

7.   Define Master-Slave Multiprocessors

8.   Define Remote Procedure Call

9.   Define Attackers.

10. Define Weak Passwords

PART - B   5 x 5 = 25

Answer All Questions

11. a)   Differentiate between Process and Threads

[OR]

b)   Define Thread and explain advantages of threads?

12. a)   What is Virtual Memory? Mention its advantages

[OR]

b)   Write short notes on Swapping

13. a)   Explain about necessary conditions of Deadlock

[OR]

b)   Write the Resource Allocation Algorithm for Dead lock?

14. a)   Explain Disk structure in detail.

[OR]

b)   Explain different Disk Scheduling Algorithms with example.

15. a) Explain Public-Key Cryptography

[OR]

b) Write short note on Authentication

PART - C

3 x 10 = 30

(Answer Any Three Questions)

16. Explain the various Scheduling Algorithm with example.

17. Discuss the various page Replacement Algorithm with example.

18. What is Deadlock? Explain Deadlock Prevention in detail.

19. Write short note on i) Virtualization ii) Distributed systems.

20. Discuss about the various protation mechanism with example.

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C-4071

PART – A

Answer All Questions

10 x 2 = 20

1.   Define EDI

2.   What is the use of XSL

3.   Write the syntax for enum in JSON .

4.   What is the use of Compare in JSON?

5.   Give some examples of B2C.

6.   Write down the problems with Business Modelling.

7.   Write down the basic SOAP syntax.

8.   Define SOAP fault element.

9.   What is Supply Chain?

10.   Define E-Commerce.

PART – B

Answer All Questions

5 x 5 = 25

11.   a)   Write short notes on DTD with example.

[OR]

b)   Explain in detail about XML DOM with example.

12.   a)   List out the various Generic keywords and explain it with example.

[OR]

b)   Discuss in detail about defining properties for JSON schema with example.

13.   a)   Illustrate in detail about conversation among web services.

[OR]

b)   Describe about the Process Architectural view .

14.   a)   Write short notes on Soap Bindings.

[OR]

b)   Explain briefly about the structure of UDDI.

15.   a)   Explain about the Rosettanet with neat diagram.

[OR]

b)   Write short notes on Role of XML in Web Content management.

(Answer Any Three Questions)

16. Discuss in detail about Presentation technologies in XML.

17. Discuss in detail about Regular expression with example.

18. Explain in detail about the Web Service Architectural stack with neat digram.

19. Narrate the concept of sending SOAP messages

20. List out the different types of B2B interactions and explain about it. With example

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M.Sc. DEGREE EXAMINATION, DECEMBER 2022

(FOR AFFILIATED COLLEGES)

COMPUTER SCIENCE

SECOND YEAR - III SEMESTER

21PCSEC33   PROGRAMMING USING PYTHON

Time : 3 Hours   Maximum : 75 Marks

PART – A   10 x 2 = 20

Answer All Questions

1. Write the uses of Indentation in Python.

2. Define: Tuple.

3. What are the types of loops in Python?

4. State and prove Function with return value in python.

5. Define: reload () function.

6. Give a note on import statement.

7. Jot down the uses of class in Python.

8. Comment on User-defined Function.

9. What is Regular Expression?

10. Define: Django Architecture.

PART – B   5 x 5 = 25

Answer All Questions

11. a) Explain the various forms of Data types.

                            [OR]

    b) Briefly explain Data type Conversion in Python.

12. a) Write about Function Arguments in Python.

                            [OR]

    b) Give short notes on the following: i) For Loop   ii) While Loop

13. a) How do you open and close a file in Python?

                            [OR]

    b) Explain in detail about File Modes in Python.

14. a) Illustrate the concept of Rising Exception in Python.

                            [OR]

    b) Explicate the concept of Destructors in Python.

15. a) Write down the importance of Django Architecture.

                            [OR]

    b) Explain the Patterns of RE.

C-4073

(Answer Any Three Questions)

16. How do you run Python program?

17. Describe in detail about Decision Making-Looping.

18. Discuss about File concept in Python.

19. Illustrate Exceptions in Python with an example.

20. Give a notes on the following:

    i) Findall () method   ii) Compile () method.

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PART – A
10 x 2 = 20

Answer All Questions

1. Define: IOT.

2. Expand WSN. How is it related to IOT?

3. Write the various forms of Sensors.

4. What are message protocols used in IOT?

5. Give a short note on IPV6.

6. List out the various applications of DA in IOT.

7. Write about Smart Retail in IOT.

8. Write a note on Smart Driver Assistance System.

9. Comment on Linux based software.

10. Mention the principle of Arduino.

PART – B
5 x 5 = 25

Answer All Questions

11. a) Explain the characteristics of IOT.

[OR]

b) Briefly note on Application areas of IOT.

12. a) Discuss on controlling sensors through Web pages.

[OR]

b) Give a brief notes on :i) MQTT   ii) Li-Fi

13. a) Explain about Security aspects of Cloud Computing.

[OR]

b) Briefly note on Adafruit cloud.

14. a) Explain about Smart Warehousing Monitoring System.

[OR]

b) Write any one applications of detection IOT Sensor.

15. a) Explain in detail about Architecture of Arduino.

[OR]

b) State the configuration of Raspberry Pi.

PART – C 3 x 10 = 30

(Answer Any Three Questions)

16. Summarize the various enabling Technologies and challenges of IOT.

17. Explain the salient features of protocols for IOT.

18. Explicate the various trends of applications of IOT.

19. Describe the following applications of IOT : i) Drone Fly   ii) Smart Retail

20. Describe the Architecture of Arduino with neat diagram.

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M.Sc. DEGREE EXAMINATION, DECEMBER 2022

(FOR AFFILIATED COLLEGES)

COMPUTER SCIENCE

SECOND YEAR – III SEMESTER

21PCSE036-1 PROGRAMMING USING C

Time : 3 Hours   Maximum : 75 Marks

PART – A   10 x 2 = 20

Answer All Questions

1. What is meant by Type Casting

2. Write an Arithmetic operator .

3. Define Function.

4. Label Character Array.

5. Delimit Array of pointers.

6. Circumscribe about Pointers to functions.

7. Write a method on union.

8. Define Global variable.

9. Write syntax for closing a file?

10. Write syntax for Multiple line command?

PART - B   5 x 5 = 25

Answer All Questions

11. a) Give details on If .. Else statement with an example.

[OR]

b) Carve a note on Enumerated Data Types in C

12. a) Carve a note on Call by reference

[OR]

b) Engrave the different string Array in C

13. a) Make clear on accessing a variable through its Pointers

[OR]

b) Portray on Pointers expression.

14. a) Difference between Structure & Pointers

[OR]

b) Give explanation on Union.

15. a) Enlighten about Input operation with an example

[OR]

b) Inscribe various command line Argument.

PART - C   3 x 10 = 30

(Answer Any Three Questions)

16. Carve various Operators used in c.

17. Note down on

     a) Array of functions.

     b) Passing strings to functions.

18. Write a short notes on

     a) Pointer & character strings.

     b) Functions returning Pointer.

19. Explain in brief about Referencing structure elements & Passing structures to functions.

20. Discuss on Closing & Opening files Operation.

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