



ବିଦ୍ୟାସାଗର ବିଶ୍ୱବିଦ୍ୟାଳୟ

**VIDYASAGAR UNIVERSITY**

**B.Sc. Honours Examination 2021**

(CBCS)

**4th Semester**

**COMPUTER SCIENCE**

**PAPER—SEC2T & SEC2P**

*Full Marks : 40*

*Time : 2 Hours*

*The figures in the right-hand margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

**SEC2T : (A) HTML PROGRAMMING**

**Group – A**

Answer any *one* question.

1×15

1. What is HTML? What is Tag? What are Elements? What is an attribute and its value? What is Webpage? Why we need a browser to run the HTML codes? What are the differences between HTM and HTML?

2+2+2+2+2+3

2. Write down the syntax for a <table> with proper example and output. How many types of heading (like H1) does an HTML contain? How to create a nested webpage (iframe) in HTML? Is audio tag supported in HTML5? How can we comment in HTML? 3+3+3+3+3
3. Explain list (UL, OL, DL) elements in HTML. Explain HTML Image Syntax with proper example. What is CSS? Write down the various types of CSS. 5+3+3+4

### Group – B

Answer any *one* question. 1×10

4. Why HTML <form> element is used? Describe about the <input> element with example and syntax. 5+5
5. Compare between 'Block' elements and 'Inline' elements in HTML. Is <source> element allowed within a <video> element? 5+5

### PRACTICAL : SEC2P

Answer any *one* question. 1×15

1. Create an HTML document with the following formatting options:
- Bold
  - Italics
  - Underline
  - Headings (Using H1 to H6 heading styles)
  - Font (Type, Size and Color)
  - Background (Colored background/Image in background)
  - Paragraph
  - Line Break

2. Create a Table with the following view:

A	B	C	D	E
	F	G		
	H	I	J	K

3. Create your biodata with html. you may use CSS to decorate.

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## SEC2T : (B) XML PROGRAMMING

### Group - A

Answer any *one* question.

1×15

1. (a) What is XML DOM? Show how to draw a DOM using an example.  
 (b) Define SGML and discuss.  
 (c) What do you understand about XML Namespaces and Linking?  
 (2+4)+(2+3)+4
2. (a) Define XLST and state the importance of XLST in context to XML.  
 (b) Briefly explain the different parts of XSL.  
 (c) How does an XML parser works? (2+3)+5+5
3. (a) Why XML is called self-describing data? Also, state some limitations of XML.  
 (b) What do you mean by DTD and who is the authority to define it?

(c) Write a XML code with XSL and describe wherever necessary.

(3+4)+(2+2)+4

**Group - B**

Answer any *one* question.

1×10

4. (a) How does XML differ from HTML? List down the features of XML.

(b) What is SOAP and how does SOAP helps XML?

3+3+2+2

5. Give the basic syntax to write a XML code? Briefly explain the components and rules associated with XML writing. 10

**PRACTICAL : SEC2P**

Answer any *one* question.

1×15

1. Create a well-formed XML document containing details of a car like: id, company name, model, engine and mileage.
2. Create a XML document which contains details about you and display the same as a table using XSLT.
3. Create a catalogue using XML with basic configurations of computer so that a user could easily search a machine of their interest. The configurations of computer may include manufacturer name, model no, processor type, memory capacity, etc.

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**SEC2T : (C) ORACLE (SQL/PL-SQL)****Group – A**Answer any *one* question.

1×15

1. (a) Write a PL/SQL program to add 1 to 20 using a simple loop.

(b) Differentiate between implicit cursor and explicit cursor.

(c) Write the purpose of following cursor attributes.

(i) %FOUND

(ii) %NOTFOUND

(iii) % ISOPEN

(iv) %ROWCOUNT

6+3+6

2. (a) Define view. Write its advantages.

(b) Consider the following table

Employee(ssn, name, department, project, salary)

Create a view “Developers” which will show only name and project name from employee table for the “Production” department.

(c) Write the purpose of following statements

(i) Commit

(ii) Rollback.

2+2+7+4

3. (a) Explain how to drop a constraint in SQL with an example.

(b) Write the basic syntax of an ALTER TABLE command to add a new column in an existing table.

(c) What are different types of operators in SQL? Write the purpose of following operators in SQL

(i) LIKE (ii) IS NULL (iii) UNIQUE 4+5+6

**Group – B**

Answer any *one* question. 1×10

4. (a) Write advantages of PL/SQL over SQL?

(b) Write the block structure of PL/SQL programming.

(c) What is the purpose of using %rowtype?

(d) What is cursor? 3+3+2+2

5. (a) Describe about data types in PL/SQL.

(b) Why does it call a strongly typed language?

(c) Write a program to call a valid SQL statement within PL/SQL block. 4+2+4

**PRACTICAL : SEC2P**

Answer any *one* question. 1×15

1. Relational schema:

Customer (Cust\_id, Cust\_name, Addr, ph\_no, pan\_no)

Loan(Loan\_id, Amount, Interest, Cust\_id)

(a) Create the above database using SQL.

(b) Find the name of customer who has drawn the highest loan amount.

(c) Find the total amount of loan drawn by customers. 7+4+4

2. Write a PL/SQL program to find smallest and highest of three input numbers. 15
3. Write a PL/SQL program to insert three rows to an existing tables. 15

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### SEC2T : (D) LINUX / UNIX PROGRAMMING

#### Group - A

Answer any *one* question. 1×15

1. (a) What are the different ways of using chmod?
  - (b) What do you understand by PATH variable? What is the difference between relative and absolute path?
  - (c) What is i-node? What does it contain? 5+(2+2)+(2+4)
2. (a) Explain different states of process with a diagram.
  - (b) Compare kernel mode versus user mode. How does kernel access file?
  - (c) Explain mounting and demounting of a file. 5+(2+3)+5
3. (a) Explain UNIX architecture with diagram.
  - (b) Explain salient feature of Unix operating system.
  - (c) Describe modes of vi editor. 5+5+5

**Group – B**

Answer any *one* question. 1×10

4. (a) What is filter? Describe the function of any two filters.
- (b) Explain loop control structure available in UNIX. (2+3)+5
5. Write short notes (any *two*) : 2×5
- (a) Wild card character.
- (b) Soft link and hard link.
- (c) IFS.
- (d) LS command.

**PRACTICAL : SEC2P**

Answer any *one* question. 1×15

1. Write a shell script to find the LCD (least common divisor) of two numbers.
2. Write a shell script to find the power of a given number ( $x^n$ , where n is an integer).
3. Write a shell script to find the binomial coefficient  $C(n, x)$ .
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## SEC2T : (E) R-PROGRAMMING

### Group – A

Answer any *one* question.

1×15

1. What are the different ways of getting help from R? Discuss about different data types used in R programming. What do you mean by subsetting? Discuss about different operators used for subsetting with proper examples. 3+4+3+5
2. What do you mean by vectorized operation? Why vectorized functions are preferred over general functions? Discuss about different ways to read from and write to the R programming console. 3+2+10
3. Why next and break statements are used in a loop? Differentiate between while loop and repeat loop. How an R program decides what values are to be returned from a function? How lapply function is used with a list? What is the difference between lapply and apply? 3+3+3+3+3

### Group – B

Answer any *one* question.

1×10

4. What is the usefulness of debugging tools in R programming? What is the use of traceback function in R? Discuss about the use of browser function in R programming. 3+2+5
5. What do you mean by scoping rule? What type of scoping rule is used in R programming? Briefly explain about the function of a profiler in R programming with an example. 3+2+5

**PRACTICAL : SEC2P**Answer any *one* question.

1×15

1. Write a program that prints a multiplication table for numbers up to 10.
2. Implement binary search to find a given number from a list of numbers.
3. Write a program to check whether a given number is a prime number or not.

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