

RRN 210071601059

**SEMESTER END EXAMINATIONS – MAY 2024**

Programme & Branch : B.Tech & CSE  
Semester : VI  
Date & Session : 28.05.2024 & FN  
Course Code & Name : CSD 3201 & Big Data and Cloud Computing  
Duration : 3 Hours  
Maximum Marks : 100

**ANSWER ALL QUESTIONS**

**PART A (10 X 2 = 20 MARKS)**

1. How Big Data is useful in virtual personal assistance tool?
2. Mention the characteristics of Big Data.
3. Differentiate Hadoop and RDBMS.
4. Define Spark.
5. Write three types of cloud service models.
6. List out the merits and demerits of Cloud Computing.
7. Mention the challenges of cloud infrastructure design.
8. What is VMware?
9. How cloud is used in Big Data?
10. Compare Big Data and Cloud computing.

**PART B (4 X 16 = 64 MARKS)**

- 11.a (i) Discuss the seven steps in Big Data workflow with a neat sketch. (8)
- (ii) Describe the significance of Big Data analytics with architecture diagram. (8)
- (OR)
- b (i) Summarize any eight applications of Big Data and specify with the appropriate tools. (16)
- 12.a (i) Elaborate the workflow of Hadoop ecosystem with a neat sketch. (16)
- (OR)



- b (i) Explain the working mechanism of HDFS in storing and querying the real time data. (16)
- 13.a (i) Illustrate any two system models for distributed and cloud computing. (8)
- (ii) Explain the essential characteristics of Cloud Computing. (8)
- (OR)
- b (i) Enumerate the challenges faced by the Cloud Computing vendors. (8)
- (ii) Describe the working mechanism of cloud delivery model with a neat sketch. (8)
- 14.a (i) Discuss in detail about the inter cloud resource management. (16)
- (OR)
- b (i) Illustrate the concepts behind the cloud infrastructure design. (10)
- (ii) Compare and contrast full virtualization and para virtualization. (6)

**PART C (1 X 16 = 16 MARKS)**

- 15.a (i) Analyze the impact and usage of Cloud Computing vendors in commerce and social media platforms with supportive tools. (16)
- (OR)
- b (i) Design a recommendation system for an e-health platform which support the factors such as scalability, data processing and real-time responsiveness in combination of cloud computing and big data technologies. (16)

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RRN 21019160002

**SEMESTER END EXAMINATIONS – MAY 2024**

Programme & Branch : B.Tech CSE, CSE(IoT) & CSE(CS)  
Semester : VI  
Date & Session : 30/05/2024 FN  
Course Code & Name : CSD 3202 & Compiler Design  
Duration : 3 Hours  
Maximum Marks : 100

**ANSWER ALL QUESTIONS**

**PART A (10 X 2 = 20 MARKS)**

1. How compiler differs from interpreter?
2. List the tokens generated by the lexical analyzer for the input:  
 $q = (\text{time} * 60) / \text{speed} + \text{distance}$ .
3. Give any two top down and bottom up parsers.
4. Eliminate the left recursion from the following grammar:  
 $A \rightarrow Ac \mid bd \mid c$
5. Write the role of three address code in intermediate code generation.
6. What is the significance of evaluation orders in syntax directed definitions?
7. Why garbage collection is important in storage management?
8. Differentiate control flow graphs and abstract syntax tree.
9. State the two types of optimization process.
10. Mention any two needs of constant propagation.

**PART B (4 X 16 = 64 MARKS)**

- 11.a (i) Describe the phases of compiler involved in performing the robust tokenization and thorough checks for semantic correctness using symbol table with suitable example. (10)
- (ii) State the need for dividing the compilation process into various phases. (6)
- (OR)
- b (i) Explain the process and use of input buffering with an example. (10)
- (ii) Write a short note on finite automata. (6)

CSD 3202

- 12.a (i) Construct the Syntax Directed Translation (SDT) to represent the translation schemes for type checking for the given grammar.

$S \rightarrow \text{Expr}$   
 $\text{Expr} \rightarrow \text{Expr} + \text{Term} \mid \text{Term}$   
 $\text{Term} \rightarrow \text{Term} * \text{Factor} \mid \text{Factor}$   
 $\text{Factor} \rightarrow (\text{Expr}) \mid \text{id}$   
 $\text{id} \rightarrow \text{int}$

(8)

- (ii) Compare and contrast the abstract syntax tree and directed acyclic graph with suitable example.

(8)

(OR)

- b (i) Describe how intermediate code is generated for control flow statement and translate the following code snippet into intermediate code.

```
while (i < 5)
{
    switch (x)
    {
        case 1:
            result += x * 2;
            break;
        case 2:
            result += x + 3;
            break;
        default:
            result -= x - 1;
    }
    i++;
}
```

(16)

- 13.a (i) Elucidate any four basic block optimization techniques to improve the efficiency and performance of code within a basic block with examples.

(16)

(OR)

- b (i) Discuss the techniques for accessing non-local data in a stack-based environment and suggest the mechanism for finding data within a procedure, which is not within the scope of the procedure.

(16)

- 14.a (i) Elaborate on the machine dependent and machine independent code optimization techniques with suitable examples.

(8)

- (ii) Apply the suitable code optimization technique for the source code given below:

$\text{pi} = (22.0/7.0)$   
 $a = 2 * \text{pi} * r$   
 $c = a * b$   
 $x = a$   
 $d = x * b + 4$   
 $e = a * b + 4$

(8)

(OR)

- b (i) Construct the flow graph for the following code snippet and perform available expressions analysis to determine the set of information about how the data flows through the code snippet.

$x = 5;$   
 $y = x + 3;$   
 $z = y * 2;$   
 $w = x + 1;$

(10)

- (ii) Illustrate the applications of data flow analysis in providing valuable insights into program behavior.

(6)

PART C (1 X 16 = 16 MARKS)

- 15.a (i) Consider the following grammar with terminal alphabet  $\Sigma\{a\}$  and start symbol U. The production rules of the grammar are:

$U \rightarrow U + V \mid V$   
 $V \rightarrow V * W \mid W$   
 $W \rightarrow (U) \mid a$

Construct the SLR parsing table for this grammar and use it to parse the input string "(a\*a)".

(16)

(OR)

- b (i) Apply the predictive parsing technique in the following grammar and validate the input string "abfg".

$S \rightarrow A$   
 $A \rightarrow aB \mid Ad$   
 $B \rightarrow bBC \mid f$   
 $C \rightarrow g$

(16)

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**SEMESTER END EXAMINATIONS – MAY 2024 / JUNE 2024**

Programme & Branch : B.Tech. ECE, EIE, EEE, Biotech, IT, CSE - All branches  
Semester : VI Date & Session : 10.06.2024 & FN  
Course Code & Name : MSD 3181 Fundamentals of Entrepreneurship  
Duration : 3 Hours Maximum Marks : 100

**ANSWER ALL QUESTIONS**

**PART A (10 X 2 = 20 MARKS)**

1. Identify the various entrepreneurial styles?
2. How would you differentiate a startup and a business?
3. What is the significance of creating customer personas?
4. How do you define an unfair advantage within the lean canvas model?
5. Who are early adopters?
6. Enumerate the steps involved in Design Thinking?
7. Define TAM and SOM.
8. Name two offline channels for product or service distribution
9. Articulate your comprehension of the concepts of CAV and CLV?
10. Define bootstrapping.



**PART B (4 X 16 = 64 MARKS)**

11. a Explain how entrepreneurs can identify the worthy problem to address, ( 16 )  
utilizing your practice venture as a case study.  
(OR)
- b Discuss the utilization of effectuation principles in your venture and ( 16 )  
elucidate their relationship with your venture.
12. a Draw and explain the value proposition of your competitor's venture. ( 16 )  
(OR)
- b Provide an overview of various market types, supported by appropriate ( 16 )  
examples
13. a With a neat block diagram explain Lean canvas model with suitable ( 16 )  
example.  
(OR)
- b Explain the four action framework with an example. ( 16 )
14. a Discuss various types of leaders, providing real-life examples for ( 16 )  
illustration.  
(OR)
- b Elaborate on the financial plan of your venture. ( 16 )

**PART C (1 X 16 = 16 MARKS)**

15. a Define the values of your venture that you have created and explain your  
Venture's Golden Circle with a neat diagram.  
(OR)
- b Explain with an example about the following (16)
- a. Solution demo,
  - b. Prototype and
  - c. Minimum viable product.



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**SEMESTER END EXAMINATIONS – JUNE 2024**

Programme & Branch : B.Tech(Common for all branches)  
Semester : VI Date & Session : 05/06/2024 FN  
Course Code & Name : SSDX12 & Sociology of Industrial relations.  
Duration : 2 Hours and 30 Minutes Maximum Marks : 100

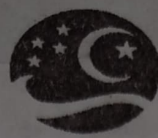
**ANSWER ALL QUESTIONS**

**PART A (10 X 2 = 20 MARKS)**

1. What are the reasons behind workers joining trade unions?
2. Spell out any four economic causes of Industrial disputes.
3. What is standing order?
4. Illustrate the flowchart of line organization.
5. Compare lock-out and lay-off
6. Tell any three characteristics of group.
7. List any four barriers of communication process.
8. What is grievance handling in industrial relation?
9. Define labour welfare according to ILO.
10. What is industrial hygiene?

**PART B (4 X 20 = 80 MARKS)**

- 11.a (i) Examine the significance of Industrial sociology in the modern globalized world. (10)
- (ii) Explain the features, advantages and disadvantages of factory system. (10)
- (OR)
- b (i) Analyze the functions and objectives of trade unions in protecting the rights and interests of workers. How do they advocate for better working conditions and fair treatment? (10)
- (ii) Distinguish Fordism and Post-Fordism in terms of their organizational principles, labour relations, and economic implications. (10)



SSDX12

- 12.a (i) Compare line and staff organization with its advantages and disadvantages (10 )  
(ii) Examine the role and functions of supervisor in industrial organization. (10 )

(OR)

- b (i) Spell out the features, advantages and disadvantages of formal and informal organization. (10)  
(ii) Discuss the causes and triggers of strikes in the workplace. What factors contribute to labor unrest and the decision to strike? (10)

- 13.a (i) What is Group? Explicate the Tuckman's stages of group formation. (10)  
(ii) Define leadership and discuss its importance in organizations and society. How does effective leadership contribute to achieving organizational goals and fostering positive social change? (10)

(OR)

- b (i) Discuss the components of the communication process and their significance in effective communication. (10)  
(ii) Elucidate the various causes and effects of grievances in industrial organization. (10)

- 14.a (i) Analyze the scope and objectives of the labour welfare in industrial sectors. (10)  
(ii) What is social security in Industrial relation? Explain the importance and scope of social security. (10)

(OR)

- b (i) Elaborate the principles to be followed in industrial hygiene. (10)  
(ii) Explain the scope and objectives of Factories Act, 1948. (10)

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RRN 210041601009

**SEMESTER END EXAMINATIONS – JUNE 2024**

Programme & Branch : B. Tech.(Common to all Branches)  
Semester : VI Date & Session : 5/06/2024 FN  
Course Code & Name : SSDX 11- Economics of Sustainable Development  
Duration : 2 Hours and 30 Minutes Maximum Marks : 100

**ANSWER ALL QUESTIONS**

**PART A (10 X 2 = 20 MARKS)**

1. Define the concept of sustainable development according to Brundtland Report.
2. Recall some important physical hazards and health effects of environment degradation.
3. What are the primary goals of sustainable development?
4. Demonstrate how Goal 16 Peace, Justice and Strong Institutions promote peaceful and inclusive societies for sustainable development?
5. What are the outcomes of Rio+20?
6. Education plays a pertinent role in sustainable development. Illustrate.
7. Outline any two environmental issues of Tamil Nadu in your own words.
8. Tell about precautionary principle.
9. Spell out any four changes that you would like to incorporate in the life style of students of your age to move towards a sustainable use of available resources.
10. Relate how de globalization will lead to local emissions?

**PART B (4 X 20 = 80 MARKS)**

- 11.a (i) Evaluate a few sustainable engineering practices for sustained development. (10)
- (ii) Justify the statement "Sustainable development is balancing the need to use resources and also conserve them for the future" with regard to the three pillars of sustainable development. (10)



(OR)

b (i) Examine how SDG 4 Quality Education and SDG 5 Gender Equality opens a world of opportunities, making it possible for each of us to contribute to a progressive, healthy society. (10)

(ii) Analyze SDG 9 Innovation and Infrastructure. (10)

12.a (i) Explain the objectives and aims of Basel Convention. Which plastic wastes are currently subject to control under Basel Convention? (10)

(ii) Appraise a few principles of Rio Summit intended to guide future sustainable development around the world. (10)

(OR)

b (i) Identify the big global environmental issues we need to resolve by 2030. (10)

(ii) Discuss the priority areas that governments should focus on to overcome the global challenges to achieve sustainable development. (10)

13.a (i) Analyze the importance of cooperation and partnership in sustainable development with reference to globalization and global governance. (10)

(ii) Elaborate the impact of globalization on sustainable development. (10)

(OR)

b (i) What is green economy? Formulate strategies as to how nations can transition into green economy. (10)

(ii) Identify the challenges nations might face while resorting to green economy. (10)

14.a (i) 'Common Property Resource Management is an important approach to sustainable development.' Justify the statement. (10)

(ii) Community-driven campaigns are the first step towards an inclusive and sustainable development. Discuss. (10)

(OR)

b (i) Examine the benefits and drawbacks of Polluter Pays Principle. (10)

(ii) Propose a few market based instruments for controlling pollution and environmental degradation. (10)

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**SEMESTER END EXAMINATIONS – JUNE 2024**

Programme & Branch : B.Tech CSE  
Semester : VI Date & Session : 03/06/2024 & FN  
Course Code & Name : CSDX 229 & Human Computer Interaction  
Duration : 3 Hours Maximum Marks : 100

**ANSWER ALL QUESTIONS**

**PART A (10 X 2 = 20 MARKS)**

1. Mention any two goals of educational and professional enterprises.
2. Name any four techniques for getting the user's attention.
3. State the taxonomy of mobile device applications.
4. Define user-centered design.
5. List any four golden rules of interface design.
6. What do you mean by A/B testing?
7. Mention the advantages and limitations of large wall displays.
8. Differentiate the roles of face-to-face and collaborative interfaces.
9. What is meant by the "inverted pyramid" style of writing?
10. State the role of emotional intelligence in healthcare system.

**PART B (4 X 16 = 64 MARKS)**

- 11.a (i) Suggest three usability measures that can be directly used to produce a practical evaluation of a system. (16)
- (OR)
- b (i) Describe the three populations of users with special needs. For each of these populations, suggest three ways by which the current interfaces could be improved to better serve them. (16)

CSDX 229

- 12.a (i) Consider the task of the new Chief Design Officer (CDO) of a start-up project is to design a system for selling pottery. The target is to develop an interface that meets the needs of both the potters and the customers. Analyze the four stages of design methodology to facilitate the proper design of such a system. (16)

(OR)

- b (i) Describe a five-stage search framework that will help to coordinate design practices to satisfy the needs of first-time, intermittent, and frequent users who are accessing a variety of textual and multimedia libraries. (15)

- 13.a (i) Exemplify the various kinds of direct manipulation with respect to translational distances. (15)

(OR)

- b (i) Illustrate the applications of speech recognition with suitable examples. (8)  
(ii) Explain the difference between direct-control and indirect-control pointing devices. (8)

- 14.a (i) Discuss the three human values that are necessary to be understood by interface designers in order to ensure a timely user experience. (15)

(OR)

- b (i) Explain the development of smartphone application in electronic healthcare records system. (16)

**PART C (1 X 16 = 16 MARKS)**

- 15.a (i) An expert reviewer complains that both designs may work with young users who are familiar and expert in using a mouse, but there will be problems for elderly and motor-impaired users who have difficulty in controlling a mouse. The reviewer recommends a new design that includes a larger font (20-point size) and a numbered list to allow selection by keyboard easily. Analyze a participatory design or social impact statement process that might clarify this issue with elderly and motor-impaired users. Identify the strategies for conducting ethnographic studies for interaction design. (16)

(OR)

- b (i) One argument against the current interface design of a popular word processor is that it has all the functional menu items appearing together, which cause the interface to be too complex. This complexity results in a confusing and frustrating experience for novice users. An alternative design is to provide different levels of functional complexity, so users can choose the level that is suitable for them, then advance to higher level as they get familiar with the tool, thus feel more comfortable and learn more efficiently. You are asked to conduct usability testing to compare these two designs. Analyze which type of usability testing should be used for this situation and outline the steps in the usability testing that can be conducted. (15)

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RRN 210071601054

**SEMESTER END EXAMINATIONS – JUNE 2024**

Programme & Branch : B.Tech (Common to all branches)  
 Semester : VI Date & Session : 05/06/2024 FN  
 Course Code & Name : SSDX14, Gender, Technology and Development  
 Duration : 2 Hours and 30 Minutes Maximum Marks : 100

**ANSWER ALL QUESTIONS**

**PART A (10 X 2 = 20 MARKS)**

1. How do you interpret the concept of Gender?
2. Differentiate between Gender and Sex.
3. What do you understand by Patriarchy?
4. Expand LGBTIQ.
5. What method is employed to determine the sex ratio in India?
6. Define gender digital divide.
7. What is the key objective of the Beti Bachao Beti Padhao program?
8. What is meant by the term 'gender budgeting'?
9. Define sustainable development.
10. Interpret the Gender and Development (GAD) perspective.

**PART B (4 X 20 = 80 MARKS)**

- 11.a (i) Gender is socially constructed, to what extent can it be transformed? Explain diverse characteristics associated with gender. (10)
- (ii) In what ways does patriarchy influence Indian society, and how does it manifest within various institutions like family, media, and politics? (10)
- (OR)
- b (i) Critically differentiate between the ideology of 'Socialist Feminism' and 'Radical Feminism.' what is their contemporary relevance in addressing gender issues? (10)
- (ii) Analyze the concept of heteronormativity intersect with broader conversations surrounding diversity, inclusion, and social justice, particularly considering the Supreme Court verdict on 'section 377 IPC' and the plea for marriage equality. (10)



- 12.a (i) Discuss the primary health concerns confronting women in India, and how do these challenges differ based on regional disparities and socioeconomic status? (10)
- (ii) Identify the factors contribute to the skewed sex ratio in India, and how has it evolved over the past few decades? (10)
- (OR)
- b (i) Assess the significance of educating women within the context of India's current educational landscape for women. (10)
- (ii) 'Gender-based violence is a barrier to gender equality and a violation of human rights. Examine the various consequences of gender-based violence on women. (10)
- 13.a (i) What are the primary factors contributing to the gender digital divide? what obstacles hinder women's access for digital world? (10)
- (ii) 'The digital gender gap is not merely about falling behind; it is about being excluded' What are the essential areas that require attention to narrow the digital gender divide? (10)
- (OR)
- b (i) Elaborate on how Information and Communication Technologies (ICTs) contribute to women's empowerment, promote gender equality, and catalyze societal transformation. (10)
- (ii) Assess the various Digital India (DI) programs specifically designed to empower women and enhance their participation in the digital world. (10)
- 14.a (i) Explain various targets of Sustainable Development Goal 5 (SDG 5) and how does SDG 5 strive to realize gender equality and foster empowerment for women and girls? (10)
- (ii) 'Budgeting with a gender lens is essential for building fair and prosperous societies.' Explain the importance of gender budgeting for achieving gender equality. (10)
- (OR)
- b (i) 'SDG 5 is not just a goal; it is a fundamental human right'. Explain the relevance of SDG 5 from the global context. (10)
- (ii) Elaborate the Women's role in Development through the Women in Development (WAD) and Gender and Development(GAD) perspectives. (10)
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**SEMESTER END EXAMINATIONS – JUNE 2024**

Programme & Branch : B.Tech CSE  
Semester : VI Date & Session : 12/06/2024 FN  
Course Code & Name : CSDX 226 & Web Analytics and Social Media Mining  
Duration : 3 Hours Maximum Marks : 100

**ANSWER ALL QUESTIONS**

**PART A (10 X 2 = 20 MARKS)**

1. Give any two tools used to discover trending topics.
2. What does folksonomy describe?
3. Define web analytics.
4. List any four advantages of Twitter.
5. Give an example for true positive and false negative
6. State the importance of grouping user interactions through clustering.
7. What is lemmatization in NLP?
8. Why is it important to analyze time-series trends in email data?
9. Differentiate RDBMS and MongoDB
10. Give instances of typical graph centrality metrics that are applied to data analysis on GitHub.

**PART B (4 X 16 = 64 MARKS)**

- 11.a (i) Explain the concept of the Facebook social graph API. (8)
- (ii) Elaborate the procedure to extract tweet entities from twitter with suitable example. (8)
- (OR)
- b (i) Explain how TF-IDF is used to assess the importance of terms in a document and the challenges associated with identifying similarity between documents (16)





- 12.a (i) Describe the role of web crawling in constructing a comprehensive web page repository. (8)
- (ii) Explain how clustering is used to fetch the similar user's linkedin profiles of job titles, company names, professional interests, geographic labels of any other field. (8)
- (OR)
- b (i) Illustrate how semantics can be inferred from syntax in linguistic analysis. (16)
- 13.a (i) Discuss the methods for assessing the efficacy of sentence detection algorithms. (16)
- (OR)
- b (i) Examine the two approaches of text summarization and analyze Luhn's summarization algorithm. (16)
- 14.a (i) Describe the communication patterns between senders and recipients in email mining. (16)
- (OR)
- b (i) Explore potential applications of Email data analysis beyond studying communication patterns. (16)

**PART C (1 X 16 = 16 MARKS)**

- 15.a (i) The trend analysis can be a very important metric for businesses who utilize social listening. Businesses may analyze which topics, reviews, and keywords on social media are currently trending, and apply mining techniques. (16)
- (OR)
- b (i) XYZ Analytics, a data science consultancy, aims to analyze GitHub repositories to understand developer collaboration patterns and project relationships. They plan to utilize GitHub API connections, graph modeling techniques, and centrality measures to extract insights from the GitHub data.
- Give instances of typical graph centrality metrics that are applied to data analysis on GitHub (16)

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