CS/IT

Hall Ticket Number:

CS411(HSEL2) (R20)

B.TECH. DEGREE EXAMINATION, DECEMBER-2023

Semester VII [Fourth Year] (Regular)

ECONOMICS FOR ENGINEERS

Time: Three hours | Maximum Marks: 70

Answer Question No.1 compulsorily. (14 x 1 = 14)
Answer One Question from each unit. (4 x 14 = 56)

1. Answer the following:

(a)	Define economics.	CO1
(b)	What is equilibrium?	CO1
(c)	What is economic problem?	CO1
(d)	State law of demand.	CO2
(e)	Define demand forecasting.	CO2
(f)	Explain nature of demand.	CO2
(g)	Define price elasticity of demand.	CO2
(h)	Describe opportunity cost.	CO3
(i)	Differentiate between fixed cost and variable cost.	CO3
(j)	Explain real cost.	CO3
(k)	Define break even analysis	CO3
(l)	Explain monetary policy.	CO4
(m)	List out the characteristics of Indian economy.	CO4
(n)	State any two functions of commercial banks.	CO4

UNIT – I

2. (a) Differentiate between micro and macro economics. (8M) CO1
   (b) Explain scope and functions of engineering economics. (6M) CO1

(OR)

3. (a) Explain profit maximization and wealth maximization. (8M) CO1

(b) Differentiate between sales revenue maximization and utility maximization. (6M) CO1

UNIT – II

4. (a) Elaborate different types of income elasticity of demand. (8M) CO2
   (b) Discuss various methods of demand forecasting. (6M) CO2

(OR)

5. (a) List out the factors determine demand forecasting. (8M) CO2
   (b) Explain demand schedule law of demand with suitable example. (6M) CO2

UNIT – III

6. (a) State the assumptions and limitations of break even analysis. (8M) CO3
   (b) Differentiate between opportunity cost and accounting cost. (6M) CO3

(OR)

7. (a) Explain the merits and demerits of break even analysis. (8M) CO3
   (b) Differentiate between opportunity cost, marginal cost and economic cost. (6M) CO3

UNIT – IV

8. (a) Explain the advantages and disadvantages of privatization. (8M) CO4
   (b) Differentiate between monetary policy and fiscal policy. (6M) CO4

(OR)

9. (a) Discuss the functions of RBI. (8M) CO4
   (b) Differentiate between TRIP's and TRAM's. (6M) CO4

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Hall Ticket Number:

CS411(HSEL5) (R20)

B.TECH. DEGREE EXAMINATION, DECEMBER-2023

Semester VII [Fourth Year] (Regular)

HUMAN RESOURCES AND ORGANIZATIONAL BEHAVIOUR

Time: Three hours | Maximum Marks: 70

Answer Question No.1 compulsorily. (14 x 1 = 14)
Answer One Question from each unit. (4 x 14 = 56)

1. Answer the following:
   (a) List nature of Human Resource Management. CO1
   (b) Summarize the concept of Job Analysis. CO1
   (c) Define job design. CO1
   (d) Define the concept of Compensation. CO2
   (e) Recall the concept of Employee Benefits. CO2
   (f) Explain the concept of Leadership. CO2
   (g) Compare wage with salary. CO3
   (h) Define the term Personality. CO3
   (i) Summarize the need for development of Individual Skills. CO3
   (j) What is Learning? CO3
   (k) Interpret the concept of Teams. CO4
   (l) Explain the process of Team Work. CO4
   (m) What are Virtual Teams? CO4
   (n) Define the concept of Group Leadership. CO4

UNIT – I

2. (a) Compare Job Description with Job Specification. (7M) CO1
   (b) Explain in detail the process of Job Analysis. (7M) CO1

(OR)

3. (a) Discuss the concept of Job Rotation and its importance. (7M) CO1

(b) Appraise any four methods of Job Evaluation. (7M) CO1

UNIT – II

4. (a) Summarise the various stages in a Career. (7M) CO2
   (b) Identify the various components of Pay Structure. (7M) CO2

(OR)

5. (a) Explain Maslow's Theory of Motivation. (7M) CO2
   (b) Explain Trait theory of Leadership. (7M) CO2

UNIT – III

6. (a) Examine the nature of Organizational Behaviour. (7M) CO3
   (b) Explain how perceptual skills can be enhanced. (7M) CO3

(OR)

7. (a) Explain any two theories of Learning. (7M) CO3
   (b) Explain the various stages of Personality Development. (7M) CO3

UNIT – IV

8. (a) Identify various reasons for Group Formation. (7M) CO4
   (b) Design a Team Building Activity for a Cross Functional team. (7M) CO4

(OR)

9. (a) Discuss how the teams could be made effective. (7M) CO4
   (b) Explain the functioning of a Cross-Functional Team. (7M) CO4

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Hall Ticket Number:

CS412(CSEL09) (R20)

B.TECH. DEGREE EXAMINATION, DECEMBER-2023

Semester VII [Fourth Year] (Regular)

CYBER SECURITY

Time: Three hours | Maximum Marks: 70

Answer Question No.1 compulsorily. (14 x 1 = 14)
Answer One Question from each unit. (4 x 14 = 56)

1. Answer the following:
   (a) What is cybercrime? How do you define it? CO1
   (b) Briefly explain about E-mail bombing. CO1
   (c) What is identity theft? CO1
   (d) What is cloud computing? What advantages do it provide? CO2
   (e) What are the purposes of hacking? CO2
   (f) What are the types of security attacks? CO2
   (g) List out the types of phishing scams. CO3
   (h) Explain how a spyware is different from malware. CO3
   (i) What is incident? Define computer security incident. CO3
   (j) What is 'Door knob rattling'? CO3
   (k) Define buffer overflow. CO3
   (l) Define steganography. CO3
   (m) Explain malicious code cybersecurity incident. CO4
   (n) List out the types of ID theft. CO4

UNIT – I

2. (a) Distinguish between threat, vulnerability and an attack with examples. (7M) CO1
   (b) How do we classify cybercrimes? Explain each one briefly. (7M) CO1

(OR)

3. Make use of OSI seven layer model with protocols and Network hacking steps to illustrate how hacking take place. CO1

UNIT – II

4.	(a)	Make use of a real-life incident to explain cyberstalking in detail.	(7M)	CO2
	(b)	Define Botnet. Explain in detail about attack vector.	(7M)	CO2

(OR)

5.	(a)	Explain in detail how stalking works.	(7M)	CO2
	(b)	Make use of tools used for active attacks and explain how it works.	(7M)	CO2

UNIT – III

6.	(a)	Illustrate the detailed steps for launching SQL Injection attack.	(7M)	CO3
	(b)	Explain in detail how key loggers can be used to commit a cybercrime.	(7M)	CO3

(OR)

7.	(a)	Explain any three preventive countermeasures.	(7M)	CO3
	(b)	Explain the difference between DoS and DDoS attack.	(7M)	CO3

UNIT – IV

8.	(a)	Explain the countermeasures to prevent from identity theft.	(7M)	CO4
	(b)	Explain the best practices for organizations for Incident handling.	(7M)	CO4

(OR)

9.	(a)	Explain in detail about computer based ID theft technique.	(7M)	CO4
	(b)	Examine in detail why organizations need incident response systems.	(7M)	CO4

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Hall Ticket Number:

CS412(CSEL10) (R20)

B.TECH. DEGREE EXAMINATION, DECEMBER-2023

Semester VII [Fourth Year] (Regular)

WEB AND MICRO SERVICES

Time: Three hours | Maximum Marks: 70

Answer Question No.1 compulsorily. (14 x 1 = 14)
Answer One Question from each unit. (4 x 14 = 56)

1. Answer the following:
   (a) List the benefits of J2EE. CO1
   (b) What are the advantages of DOM parsers? CO1
   (c) Mention the components of Multi-tier architecture? CO1
   (d) Mention the classes and methods of SAX parsers. CO1
   (e) What do you mean by RESTful web services? CO2
   (f) What is the functionality of GET method? CO2
   (g) What is the objective of JNDI? CO2
   (h) Give an application for WSDL. CO2
   (i) What are the rules to develop a microservice oriented application? CO3
   (j) List the advantages of microservice. CO3
   (k) What are the limitations of monolithic application? CO3
   (l) Categorize the hierarchy in DDD. CO4
   (m) What the artifacts of DDD? CO4
   (n) How do you test a microservice? CO4

UNIT – I

2. (a) Illustrate J2EE multi-tier architecture with a neat diagram. (7M) CO1
   (b) Describe JAVA XML parsers with examples. (7M) CO1

(OR)

3. (a) Explain the layers of RMI architecture. (7M) CO1
   (b) Justify the reason to implement CORBA application with multithreading. (7M) CO1

UNIT – II

4. (a) List and describe the different HTTP methods used in RESTful web services. (7M) CO2
   (b) What are the elements of SOAP message structure? Give an example. (7M) CO2

(OR)

5. (a) What is the purpose of an abstract and concrete in WSDL? Illustrate them with examples. (7M) CO2
   (b) Explain UDDI registry with its syntax. (7M) CO2

UNIT – III

6. (a) Differentiate monolithic and microservices architecture. (7M) CO3
   (b) Discuss the characteristics of microservices for an E-commerce application. (7M) CO3

(OR)

7. (a) Discuss the challenges in deploying microservices. (7M) CO3
   (b) Explain how a message is created in spring boot using NetBeans IDE. (7M) CO3

UNIT – IV

8. (a) Describe the mandatory services for good microservices. (7M) CO4
   (b) Explain with an example how DDD principles are applied. (7M) CO4

(OR)

9. (a) Discuss with an example how a web service is published. (7M) CO4
   (b) Explain the overview of AngularJS framework with an example. (7M) CO4

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Hall Ticket Number:

CS413(CSEL11) (R20)

B.TECH. DEGREE EXAMINATION, DECEMBER-2023

Semester VII [Fourth Year] (Regular)

INTERNET OF THINGS

Time: Three hours | Maximum Marks: 70

Answer Question No.1 compulsorily. (14 x 1 = 14)
Answer One Question from each unit. (4 x 14 = 56)

1. Answer the following:
   (a) Define Internet of Things. CO1
   (b) List out devices required for IoT. CO1
   (c) What are the drawbacks of IoT? CO1
   (d) Write difference between sensor and actuator. CO2
   (e) What all the IoT devices can be used for environment? CO2
   (f) List out layers in IoT protocol stack. CO2
   (g) Compare and contrast M2M and IoT. CO3
   (h) What is software defined networking? CO3
   (i) List out network operator requirements. CO3
   (j) How many pins present on Arduino board? CO4
   (k) Expand GPIO. CO4
   (l) List out various operating systems used for Raspberry Pi. CO4
   (m) Which programming language will be used to work with Arduino? CO4
   (n) What may happen if the Pi voltage is too low? CO4

UNIT – I

2. (a) Describe physical design of IoT. (7M) CO1
   (b) Illustrate applications of IoT. (7M) CO1

(OR)

3. (a) Explain IoT levels with neat diagram. (7M) CO1
   (b) Describe IoT enabling technologies. (7M) CO1

UNIT – II

4. Can you make IoT system for counting and tracking people participating in a meeting that takes place in a smart room? CO2

(OR)

5. There are many industries with different production lines and some of the process in industries cannot be monitored by human near the production line. The industry may be a small scale or a huge one there are some restricted areas that has to be monitored. There are different process running in each industry, but the security and the safety of the industry is the same in every industry. Can you make IoT system to solve this problem using IoT? CO2

UNIT – III

6. (a) Compare and contrast SDN and NFV. (7M) CO3
   (b) Mention various reasons for the need of IoT system management. (7M) CO3

(OR)

7. Illustrate IoT system management with NETCONF. CO3

UNIT – IV

8. (a) List out features of Raspberry Pi. (7M) CO4
   (b) Illustrate the IoT model using DHT11 and Raspberry Pi and write a program to detect temperature. (7M) CO4

(OR)

9. (a) Illustrate the IoT model using Ultrasonic Sensor and Arduino and write a program to detect temperature. (7M) CO4
   (b) Illustrate the IoT model using LED and Arduino and write a program to to switch on LED for 2 seconds and switch off for 1 second. (7M) CO4

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Hall Ticket Number:

CS413(CSEL12) (R20)

B.TECH. DEGREE EXAMINATION, DECEMBER-2023

Semester VII [Fourth Year] (Regular)

VISUAL PROGRAMMING

Time: Three hours | Maximum Marks: 70

Answer Question No.1 compulsorily. (14 x 1 = 14)
Answer One Question from each unit. (4 x 14 = 56)

1. Answer the following:
   (a) What do you mean by explicit conversion? CO1
   (b) Define string data type. CO1
   (c) Why C# is related to .NET? CO1
   (d) What do you mean by delegates? CO2
   (e) What is the purpose of a constructor? CO2
   (f) What is multicast delegate? CO2
   (g) What is polymorphism? CO2
   (h) What is the step to create windows application? CO3
   (i) Define ADO.NET object model. CO3
   (j) What are the uses of server side controls? CO3
   (k) List the components of ASP.NET file. CO3
   (l) What do you mean by order by clause? CO4
   (m) Briefly describe Language-Integrated Query (LINQ). CO4
   (n) What are LINQ varieties? CO4

UNIT – I

2. (a) Describe the architecture of .NET framework with neat diagram. (7M) CO1
   (b) Discuss different variable types with examples. (7M) CO1

(OR)

3. (a) Write C# console program to find second smallest number in an array. (7M) CO1
   (b) Explain C# console application basic structure. (7M) CO1

UNIT – II

4. (a) Explain method overloading with an example. (7M) CO2
   (b) Describe how C# support multiple inheritance. Explain by giving an example. (7M) CO2

(OR)

5. (a) List and discuss the types of inheritance with example. (7M) CO2
   (b) Explain the features of Object Oriented Programming in details. (7M) CO2

UNIT – III

6. (a) Create simple windows application to select the every record from the table in database and display these records to the user. (7M) CO3
   (b) How to use ASP.NET validation control to validate user input. (7M) CO3

(OR)

7. (a) Illustrate the ASP.NET server controls. (7M) CO3
   (b) How to create a windows forms? Explain various forms events and control with example. (7M) CO3

UNIT – IV

8. (a) Describe details about XML data using XmlReader and XmlWriter. (7M) CO4
   (b) Discuss LINQ method syntax with an example. (7M) CO4

(OR)

9. (a) Discuss different types of LINQ in detail. (7M) CO4
   (b) Explain in detail about the XML and ADO.NET. (7M) CO4

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Hall Ticket Number:

CS415(JOEL01) (R20)

B.TECH. DEGREE EXAMINATION, DECEMBER-2023

Semester VII [Fourth Year] (Regular)

BIG DATA PROCESSING

Time: Three hours | Maximum Marks: 70

Answer Question No.1 compulsorily. (14 x 1 = 14)
Answer One Question from each unit. (4 x 14 = 56)

1. Answer the following:
   (a) List different data sources. CO1
   (b) Define Big Data and its characteristics. CO1
   (c) What is HDFS? CO1
   (d) Show the key advantages in Hadoop. CO1
   (e) Define MapReduce. CO2
   (f) Give the list of counters of MapReduce. CO2
   (g) What is the order of the three steps to MapReduce? CO2
   (h) What is NoSQL? CO3
   (i) What is Key-value data store? CO3
   (j) Define sharding. CO3
   (k) What do you mean by windowing in HiveQL? CO4
   (l) Specify the role of Pig Latin in Hadoop. CO4
   (m) Give the features of Zookeeper. CO4
   (n) Generalize the difference between Pig and Hive. CO4

UNIT – I

2. (a) Discuss the evolution of Big Data. (7M) CO1
   (b) Explain the significance of secondary Namenode in HDFS. (7M) CO1

(OR)

3. (a) Explain the architecture of HDFS. (7M) CO1
   (b) Illustrate about different configuration files in Hadoop. (7M) CO1

UNIT – II

4. (a) Write a MapReduce program to find maximum recorded temperature by year from data collected from national climate data center. (7M) CO2
   (b) Explain the role of combiner and partitioner in a MapReduce application. (7M) CO2

(OR)

5. (a) Explain the failures in MapReduce. (7M) CO2
   (b) Explain the MapReduce data flow with single reduce and multiple reduce. (7M) CO2

UNIT – III

6. (a) What is NoSQL? What are the advantages of NoSQL? And explain types of NoSQL Databases. (7M) CO3
   (b) Write a short notes on version stamps on multiple nodes. (7M) CO3

(OR)

7. (a) Explain (i) Master-slave replication (ii) Peer-peer replication. (7M) CO3
   (b) Demonstrate the working of key-value store with an example. (7M) CO3

UNIT – IV

8. (a) Explain AVRO data serialization technique. (7M) CO4
   (b) Illustrate main features and architecture of Hive with neat diagram. (7M) CO4

(OR)

9. (a) Write a short note on the Hadoop ecosystem. (7M) CO4
   (b) Explain PIG commands with examples. (7M) CO4

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Hall Ticket Number:

CS/EC415(EEOL1) (R20)

B.TECH. DEGREE EXAMINATION, DECEMBER-2023

Semester VII [Fourth Year] (Regular)

RENEWABLE ENERGY SOURCES

Time: Three hours | Maximum Marks: 70

Answer Question No.1 compulsorily. (14 x 1 = 14)
Answer One Question from each unit. (4 x 14 = 56)

1. Answer the following:

(a)	Mention the few conventional energy sources.	CO1
(b)	List out the few renewable energy sources.	CO1
(c)	What is energy planning?	CO1
(d)	Define solar constant.	CO2
(e)	What is solar radiation?	CO2
(f)	What is terrestrial solar radiation?	CO2
(g)	What is wind mills?	CO3
(h)	Define maximum power in wind generation.	CO3
(i)	What is meant by pitch control in wind generation?	CO3
(j)	Define wave energy.	CO4
(k)	What is function of biogas digestor?	CO4
(l)	What is geothermal energy?	CO4
(m)	Identify the fundamental sources of biofuels.	CO4
(n)	Mention application of geothermal energy.	CO4

UNIT – I

2. (a) Distinguish between the renewable and conventional energy sources. (7M) CO1
   (b) Discuss about the energy efficiency and management. (7M) CO1

(OR)

3. (a) Discuss in detail about the natural energy currents on earth with help of neat sketch. (7M) CO1

(b) Illustrate the energy resources with help of Spaghetti and Pie diagrams. (7M) CO1

UNIT – II

4. (a) Write about the classification of solar collectors. (7M) CO2
   (b) Explain in detail about solar thermal central receiver system. (7M) CO2

(OR)

5. (a) Explain in detail about extra terrestrial solar radiation. (7M) CO2
   (b) Explain in detail about the photovoltaic energy conversion. (7M) CO2

UNIT – III

6. (a) With a neat block diagram explain about basic components of wind energy conversion system. (7M) CO3
   (b) Differentiate between vertical and horizontal axis wind mills. (7M) CO3

(OR)

7. (a) Discuss about the planetary and local winds. (7M) CO3
   (b) Explain in detail about maximum power in wind energy. (7M) CO3

UNIT – IV

8. (a) Explain in detail about anaerobic digestion for biogas. (7M) CO4
   (b) Write a short note on simple single pool tidal system. (7M) CO4

(OR)

9. (a) Explain briefly about the principles of OTEC plant operations. (7M) CO4
   (b) Analyse the environmental impacts of geo thermal energy. (7M) CO4

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Hall Ticket Number:

CE/CH/CS/EC/EE/IT/ME415(NCOL3) (R20)

B.TECH. DEGREE EXAMINATION, DECEMBER-2023

Semester VII [Fourth Year] (Regular)

NATIONAL CADET CORPS - III

Time: Three hours | Maximum Marks: 70

Answer Question No.1 compulsorily. (14 x 1 = 14)
Answer One Question from each unit. (4 x 14 = 56)

1. Answer the following:

(a)	Define Empathy.	CO1
(b)	List any four types of Inter Personal Skills.	CO1
(c)	Explain the Concept of Emotional Intelligence.	CO1
(d)	Explain any two functions of Human Body.	CO2
(e)	Differentiate Disease and Prevention.	CO2
(f)	Recall different types of Hygiene Procedures.	CO2
(g)	Define Various types of Social Evils.	CO3
(h)	Explain the Importance of Waste Management.	CO3
(i)	Define Leader and Leadership.	CO3
(j)	State any three types of Armed Forces.	CO4
(k)	Define weapon Equipment's used in Army.	CO4
(l)	List any four Organizations of Army.	CO4
(m)	Explain the Concept of Badges and Ranks.	CO4
(n)	Recall different types of Study Battles in War.	CO4

UNIT – I

2. (a)	Discuss the causes and effects of intra and interpersonal skills with examples.	(7M)	CO1
(b)	Outline the features of a critical thinking procedure and the importance of creativity.	(7M)	CO1

(OR)

3. (a)	Define the concept of decision making and how it will impact on people.	(7M)	CO1

(b) Explain the concept of interview skills with examples. (7M) CO1

UNIT – II

4. (a) Elucidate the importance of cycle and motor cycle rallies in briefly. (7M) CO2
   (b) What are the contributions of the youth in Nation Building? Explain their importance. (7M) CO2

(OR)

5. (a) Illustrate merits of unity in diversity and its advantages briefly. (7M) CO2
   (b) Infer various general behaviour of boys and girls in Cadets. (7M) CO2

UNIT – III

6. (a) Elucidate the significance of women empowerment and why it's needed. (7M) CO3
   (b) What are the prerequisites of leadership and the challenges associated with them. (7M) CO3

(OR)

7. (a) Infer various traffic awareness strategies followed in other countries. (7M) CO3
   (b) What is Cyber Management? Discuss its needs, purpose and objectives in today rapidly changing environment (7M) CO3

UNIT – IV

8. (a) Discuss the need and purpose of war heroes and how it will affect the country positively. (7M) CO4
   (b) Why the country implemented different methods in armed forces. Comment. (7M) CO4

(OR)

9. (a) Mention the significance of biographies of renowned generals with examples. (7M) CO4
   (b) Describe the internal and external factors affecting Indian military with examples. (7M) CO4

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