CMR COLLEGE OF ENGINEERING & TECHNOLOGY
(UGC AUTONOMOUS)
B.Tech III Semester Regular Examinations February-2024
Course Name: JAVA PROGRAMMING
(Common for CE, EEE, ME, ECE & CSM)

Date: 16.02.2024 AN	Time: 3 hours	Max.Marks: 60

(Note: Assume suitable data if necessary)

PART-A
Answer all TEN questions (Compulsory)
Each question carries ONE mark.   10x1=10M

1.	How do we instantiate an object in Java?	1 M
2.	Define this keyword.	1 M
3.	Define Inner class.	1 M
4.	List the types of Inheritance.	1 M
5.	List out the access specifiers available in Java.	1 M
6.	Define StringBuffer.	1 M
7.	What are two ways to create new threads?	1 M
8.	What is thread synchronization?	1 M
9.	What are the differences between FileInputStream and FileOutputStream?	1 M
10.	What is a random access file?	1 M

PART-B
Answer the following. Each question carries TEN Marks.   5x10=50M

11.A).	Explain briefly about the features (buzzwords) of Java.	10M
	OR	
11. B).	Explain the different types of constructors with an example.	10M
12. A).	Explain about the different types of Arrays and write a Java program to perform the multiplication of two matrices.	10M
	OR	
12. B).	Describe the any two types of inheritance with an example program.	10M
13. A).	Discuss in detail about creating and importing packages with an example program.	10M
	OR	
13. B).	What is an Exception? Explain different types of Exception with an example.	10M
14. A).	Define Thread and explain various methods of Thread class with an example.	10M
	OR	
14. B).	Discuss thread priorities with an example program.	10M
15. A).	Discuss about the BufferedInputStream class and BufferedOutputStream class in Java with an example program.	10M
	OR	
15. B).	Define Scanner class, Explain about the methods available in Scanner class.	10M

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CMR COLLEGE OF ENGINEERING & TECHNOLOGY
(UGC AUTONOMOUS)
B.Tech III Semester Regular Examinations February-2024
Course Name: INTRODUCTION TO IOT
(Information Technology)

Date: 14.02.2024 AN	Time: 3 hours	Max.Marks: 60

(Note: Assume suitable data if necessary)
PART-A
Answer all TEN questions (Compulsory)
Each question carries ONE mark.   10x1=10M

1. List the IoT protocols used in Link layer and explain any two in detail.   1 M
2. Differentiate between sensors and actuators.   1 M
3. Define Physical layer.   1 M
4. What is the Network Function Virtualization?   1 M
5. Define Tuple with an example in Python program.   1 M
6. What is the interpreted language?   1 M
7. What is the work of I2C in Raspberry Pi?   1 M
8. What is the work of SPI interface in Raspberry Pi?   1 M
9. Write any one Administration & one Security services in Boto.   1 M
10. Write the role of a Router in WAMP.   1 M

PART-B
Answer the following. Each question carries TEN Marks.   5x10=50M

11.A). What are the roles of communication protocols and Embedded Systems?   10M

OR

11. B). Explain in Detail about IoT Protocols.   10M

12. A). Why the network wide configuration is important for IoT systems with multiple nodes   10M
explain in detail.

OR

12. B). Write in details introduction to Arduino Programing.   10M

13. A). What is the difference between a python module and a package? Explain with an   10M
Example.

OR

13. B). Explain about Domain model specification.   10M

14. A). How is software define network in IOT different from traditional networking.   10M

OR

14. B). How is Raspberry Pi different from a desktop Computer?   10M

15. A). Explain the component of IOT healthcare.   10M

OR

15. B). Write a short notes on i) Smart Grid ii) Industrial IOT.   10M

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CMR COLLEGE OF ENGINEERING & TECHNOLOGY
(UGC AUTONOMOUS)
B.Tech III Semester Regular Examinations February-2024
Course Name: FUNDAMENTALS OF INTERNET OF THINGS
(Common for CSE, IT, CSC, CSM, CSD & AIM)

Date: 16.02.2024 AN   Time: 3 hours   Max.Marks: 60

(Note: Assume suitable data if necessary)

PART-A
Answer all TEN questions (Compulsory)
Each question carries ONE mark.   10x1=10M

1.	Write the features of Arduino Uno.	1 M
2.	What is IoT? List the characteristics of an IoT.	1 M
3.	What is the purpose of Raspberry PI?	1 M
4.	Write the advantages of Node MCU.	1 M
5.	What is M2M? Mention its role in IoT.	1 M
6.	Write the Cloud enabling technologies.	1 M
7.	Compare the CAN and I2C Protocol.	1 M
8.	Write the communication protocols used in IoT environment.	1 M
9.	Write the Applications of IoT.	1 M
10.	What is smart agriculture?	1 M

PART-B
Answer the following. Each question carries TEN Marks.   5x10=50M

11.A). Explain about serial functions and switches using digital I/O by using arduino.   10M

OR

11. B). Write a arduino program to glow the LED1 in Red, LED2 in Green and LED3 in Blue color using RGB LED sensor.   10M

12. A). Draw the pin out configuration of Node MCU with neat sketch and explain each pin.   10M

OR

12. B). Write a raspberry pi code to activate and deactivate the 3 LED's.   10M

13. A). Is M2M is part of the IoT, while M2M standards have a prominent place in the IoT standards landscape? Justify your answer.   10M

OR

13. B). Discuss the IoT reference model with neat sketch.   10M

14. A). Explain any two wireless sensor network technologies.   10M

OR

14. B). What is an IEEE 1394? Explain the role of IEEE 1394 in IoT environment with neat sketch.   10M

15. A). Describe about cases studies in agriculture and home automation.   10M

OR

15. B). Describe about cases studies in smart city and lifestyle.   10M

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CMR COLLEGE OF ENGINEERING & TECHNOLOGY
(UGC AUTONOMOUS)
B.Tech III Semester Regular Examinations February-2024
Course Name: RENEWABLE ENERGY SOURCES
(Common for CSE, IT, CSC, CSM, CSD & AIM)

Date: 16.02.2024 AN   Time: 3 hours   Max.Marks: 60

(Note: Assume suitable data if necessary)
PART-A
Answer all TEN questions (Compulsory)
Each question carries ONE mark.   10x1=10M

1.	Define Renewable Energy Sources and give some examples.	1 M
2.	List the options adopted for enhancing the efficiency of solar collectors.	1 M
3.	Write various applications of the Solar energy.	1 M
4.	Write a note on total solar energy received in India.	1 M
5.	List out the various components of a wind turbine.	1 M
6.	What are the types of wind turbine?	1 M
7.	What are the merits of biomass as energy sources?	1 M
8.	List the different Biomass resources.	1 M
9.	List the advantages of Tidal Power plant.	1 M
10.	What are the main applications of geothermal energy?	1 M

PART-B
Answer the following. Each question carries TEN Marks.   5x10=50M

11.A). Write the differences between renewable and non renewable sources.   10M

OR

11. B). Explain need and development of renewable energy sources in India.   10M

12. A). What are the instruments for measuring solar radiation explain?   10M

OR

12. B). Explain clearly the construction and working principle of Photovoltaic cell with neat diagrams and also mention merits, demerits and applications?   10M

13. A). Explain in detail about the various factors governing the selection of site for wind turbine power plant.   10M

OR

13. B). With a neat diagram, explain how wind energy can be Converted into electrical energy.   10M

14. A). Explain the Principles of Biomass conversion process.   10M

OR

14. B). With neat diagram, explain the types of Biogas plant.   10M

15. A). With reference to neat layout diagrams, explain the operation of a closed cycle OTEC plant.   10M

OR

15. B). i) What are the advantages and limitations of small scale hydroelectric power?   4M
ii) Explain how geothermal can be Converted into electrical energy.   6M

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CMR COLLEGE OF ENGINEERING & TECHNOLOGY
(UGC AUTONOMOUS)
B.Tech III Semester Regular Examinations February-2024
Course Name: DISASTER PREPAREDNESS & PLANNING MANAGEMENT
(Common for CSE, IT, CSC, CSM, CSD & AIM)

Date: 16.02.2024 AN   Time: 3 hours   Max.Marks: 60

(Note: Assume suitable data if necessary)

PART-A
Answer all TEN questions (Compulsory)
Each question carries ONE mark.   10x1=10M

1. Define Hazard.   1 M
2. Define Capacity.   1 M
3. What is the coastal length of India?   1 M
4. What is soil erosion?   1 M
5. List any three factors for climate change.   1 M
6. Which country is more susceptible to disasters in the world?   1 M
7. What is mitigation?   1 M
8. What is NDRF and NIDM?   1 M
9. Define Land use planning.   1 M
10. What is recovery?   1 M

PART-B
Answer the following. Each question carries TEN Marks.   5x10=50M

11.A). Define vulnerability and explain the various types of vulnerability with suitable examples.   10M

OR

11. B). Explain the impact of disasters on the development of country.   10M

12. A). List and explain four types of manmade disasters.   10M

OR

12. B). Identify the causes of floods and discuss the remedial measures for the same.   10M

13. A). Explain the political and social implications of disasters.   10M

OR

13. B). Discuss urban disasters with suitable examples.   10M

14. A). Discuss the disaster management cycle in detail.   10M

OR

14. B). Explain the roles and responsibilities of NDMA.   10M

15. A). Discuss the impact of environmental modifications such as urbanization on vulnerability.   10M

OR

15. B). Explain by giving examples, what do you understand by sustainable and environmentally friendly development.   10M

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CMR COLLEGE OF ENGINEERING & TECHNOLOGY
(UGC AUTONOMOUS)
B.Tech III Semester Regular Examinations February-2024
Course Name: FUNDAMENTALS OF ENGINEERING MATERIALS
(Common for CSE, IT, CSC, CSM, CSD & AIM)

Date: 16.02.2024 AN   Time: 3 hours   Max.Marks: 60

(Note: Assume suitable data if necessary)

PART-A
Answer all TEN questions (Compulsory)
Each question carries ONE mark.   10x1=10M

1. What is grain boundary?   1 M
2. Define unit cells and packing factor.   1 M
3. State Phase rule.   1 M
4. What is the significance of the axes in a phase diagram?   1 M
5. Relate hardening and hardenability.   1 M
6. What is a hypoeutectoid steel?   1 M
7. Name the most common types of cast iron.   1 M
8. What is the primary alloying element in bronze?   1 M
9. Define the term "composite material."   1 M
10. What is the primary bonding mechanism in ceramic compounds?   1 M

PART-B
Answer the following. Each question carries TEN Marks.   5x10=50M

11.A). Why are Miller indices important in crystallography and material science? How can the   10M
orientation of crystallographic planes and directions be described using Miller indices?

OR

11. B). What are Hume-Rothery's rules in the context of metallurgy and alloy formation?   10M

12. A). Mention about the Eutectic and Eutectoid reactions with one example for each.   10M

OR

12. B). Describe the construction of phase diagrams using cooling curves.   10M

13. A). With a neat sketch, describe the phases which occur in Iron – Iron Carbide diagram.   10M

OR

13. B). Write explanatory notes on Annealing, Normalizing, Hardening and Tempering.   10M

14. A). Discuss the composition, microstructure, properties and applications of grey cast iron   10M

OR

14. B). What are the important properties of copper? Name different alloys of copper and give   10M
their compositions?

15. A). Write short notes on i) polymers ii) ceramics.   10M

OR

15. B). Classify composites. Give the advantages of particle reinforced composites over fibre   10M
reinforced composites.

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CMR COLLEGE OF ENGINEERING & TECHNOLOGY
(UGC AUTONOMOUS)
B.Tech III Semester Regular Examinations February-2024
Course Name: BASICS OF LOGISTICS AND SUPPLY CHAIN MANAGEMENT
(Common for CSE, CSC, CSM, CSD & AIM)

Date: 16.02.2024 AN   Time: 3 hours   Max.Marks: 60

(Note: Assume suitable data if necessary)
PART-A
Answer all TEN questions (Compulsory)
Each question carries ONE mark.   **10x1=10M**

1. What is strategic fit?   1 M
2. Explain green supply chain management.   1 M
3. What is cross docking?   1 M
4. Write short notes Third party logistics (3PL).   1 M
5. Explain the role distribution in supply chain.   1 M
6. Briefly describe e- business and its impact on distribution.   1 M
7. Define the bullwhip effect.   1 M
8. Explain Global supply chain.   1 M
9. What is collaborative planning?   1 M
10. Explain Supply chain 4.0   1 M

PART-B
Answer the following. Each question carries TEN Marks.   **5x10=50M**

11.A). Discuss the objectives of supply chain and explain stages of supply chain.   10M

OR

11. B). "A position of consistent superiority over competitors in terms of customer preference   10M
may be achieved through Supply chain strategies." Explain how a firm gains competitive
advantage through Supply Chain Strategies?

12. A). Describe the components and functions of logistics management.   10M

OR

12. B). Examine the various modes of Transportation. On what bass one should decide the best   10M
mode of transportation.

13. A). Evaluate the several factors influencing distribution in supply chain.   10M

OR

13. B). Elaborate the factors effecting the network design decisions.   10M

14. A). Analyze diverse types of performance measurement dimensions for a supply chain.   10M

OR

14. B). Appraise the challenges faced in establishing a global supply chain.   10M

15. A). Discuss the role of IT in creating suitable supply chain net work   10M

OR

15. B). What is vendor managed inventory? Explain the key things that need to be done to   10M
implement VMI in the organization.

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