| Reg. No. | | | | | | | | | | | | |
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| Question Paper Code | 12565 |
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**B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2024**

Eighth Semester

**Computer Science and Engineering**

**20CSEL801 – GREEN COMPUTING**

Regulation - 2020

Duration: 3 Hours Max. Marks: 100

**PART - A (10 × 2 = 20 Marks)**

Answer ALL Questions

| | | Marks | K – Level | CO |
|---|---|---|---|---|
| 1. | Define Green Computing and explain its significance in today's world. | 2 | K1 | CO1 |
| 2. | List and briefly explain two strategies for achieving Green Computing. | 2 | K1 | CO1 |
| 3. | Discuss the significance of Design and Development Models in creating environmentally friendly technologies. | 2 | K2 | CO2 |
| 4. | Show the contribution of Networks and Devices to Green Computing. | 2 | K1 | CO2 |
| 5. | Explain the role of Electric Utilities in supporting the virtualization of IT systems. | 2 | K2 | CO3 |
| 6. | Discuss the key features of a Green Data Center and its significance in sustainable IT operations. | 2 | K2 | CO3 |
| 7. | Describe the key components of a Green Enterprise Transformation Roadmap. | 2 | K1 | CO4 |
| 8. | List the future of Green IT in the four dimensions. | 2 | K1 | CO4 |
| 9. | Describe the Green IT strategies to be utilized to improve sustainability in the Hospital sector. | 2 | K1 | CO5 |
| 10. | Describe the purpose of using Case Study Scenarios for Trial Runs in implementing Green IT initiatives. | 2 | K1 | CO5 |

**PART - B (5 × 13 = 65 Marks)**

Answer ALL Questions

| | | | Marks | K – Level | CO |
|---|---|---|---|---|---|
| 11 | a) | List the concept of a carbon foot print in the context of Green Computing, and how can organizations measure and reduce their carbon emissions? | 13 | K1 | CO1 |
| | | **OR** | | | |
| | b) | Explain the policies and practices should organizations implement to ensure environmentally responsible IT operations, and what metrics can be used to measure their effectiveness in reducing environmental impact? | 13 | K2 | CO1 |
| 12 | a) | Apply the best practices in designing and developing green computing technologies, and how can organizations incorporate sustainability into their product development lifecycle? | 13 | K3 | CO2 |

**OR**

| | | | | | |
|---|---|---|---|---|---|
| | b) | Illustrate the green business process management in improving the operational efficiency and reduce environmental impact in organizations. | *13* | *K2* | *CO2* |
| 13. | a) | Demonstrate the virtualization contribution to Green Computing and discuss its potential benefits. | *13* | *K3* | *CO3* |
| | | **OR** | | | |
| | b) | Interpret the importance and benefits of materials recycling in the context of Green Computing. | *13* | *K2* | *CO3* |
| 14. | a) i) | Examine the socio-cultural implications of adopting Green IT practices in society, and how do these practices influence behavior and attitudes towards environmental sustainability? Discuss with examples. | *7* | *K3* | *CO4* |
| | ii) | Describe the role of Green Compliance Protocols, Standards, and Audits in ensuring environmental responsibility and accountability in businesses. How do these initiatives impact socio-cultural perceptions of corporate sustainability? | *6* | *K1* | *CO4* |
| | | **OR** | | | |
| | b) i) | Discuss the emergent carbon issues in the context of technological advancements and the future of Green IT. How are socio-cultural factors influencing the development and adoption of carbon-reducing technologies? | *7* | *K2* | *CO4* |
| | ii) | Illustrate the potential technological solutions and future trends in Green IT that address carbon emissions and environmental sustainability. How do these innovations intersect with socio-cultural values and behaviors towards environmental conservation? | *6* | *K3* | *CO4* |
| 15. | a) i) | Determine the application of Green IT strategies and applications in a Home setting, discussing potential energy-saving measures, waste reduction techniques, and sustainable practices for everyday living. | *7* | *K3* | *CO5* |
| | ii) | Discuss the challenges and opportunities in implementing Green IT strategies in the Packaging Industry, considering factors such as material sourcing, recycling initiatives, and sustainable packaging designs. | *6* | *K2* | *CO5* |
| | | **OR** | | | |
| | b) i) | Illustrate the Environmentally Responsible Business Strategies (ERBS), and what are the key challenges they may face? | *7* | *K3* | *CO5* |
| | ii) | Examine the role of Green IT in the Telecom Sector, discussing strategies for reducing energy consumption in data centers, improving network efficiency, and promoting the use of renewable energy sources in telecommunications infrastructure. | *6* | *K3* | *CO5* |

## PART - C (1× 15 = 15 Marks)

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|---|---|---|---|---|---|
| 16. | a) | Analyze the two crucial reasons why a business of yours should adopt environmentally responsible business strategies. How do you believe emerging technologies (such as mobile, Web x.0, Cloud computing) should be incorporated in business to help to reduce the carbon footprint? | *15* | *K3* | *CO6* |
| | | **OR** | | | |
| | b) | Develop the SWOT of Good Mead Hospital, Strategic Concerns of Management and Lessons Learned in Implementing Green IT Strategies. | *15* | *K3* | *CO6* |