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Question Paper Code	13398
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B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2025

Eighth Semester

Computer Science and Engineering
20CSEL801 - GREEN COMPUTING

Regulations - 2020

Duration: 3 Hours

Max. Marks: 100

PART - A (MCQ) (10 × 1 = 10 Marks)

Answer ALL Questions

Marks	K- Level	CO
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|--|---|----|-----|
| 1. Which of the following is an environmentally responsible IT practice? | 1 | K1 | CO1 |
| (a) Disposing of e-waste in landfills | | | |
| (b) Using energy-efficient devices | | | |
| (c) Increasing paper-based documentation | | | |
| (d) Running servers 24/7 unnecessarily | | | |
| 2. How can organizations contribute to Green Computing? | 1 | K1 | CO1 |
| (a) Encouraging remote work to reduce energy use | | | |
| (b) Using older, energy-inefficient hardware | | | |
| (c) Printing unnecessary documents | | | |
| (d) Keeping computers on all the time | | | |
| 3. Which of the following best describes the primary goal of Green IT initiatives? | 1 | K1 | CO2 |
| (a) Enhancing software usability | | | |
| (b) Reducing the environmental impact of information technology | | | |
| (c) Increasing network bandwidth | | | |
| (d) Maximizing data storage capacity | | | |
| 4. An organization plans to implement a telecommuting policy to promote sustainability. Which of the following outcomes aligns best with Green IT objectives? | 1 | K1 | CO2 |
| (a) Increased on-site technical support | | | |
| (b) Reduced employee productivity | | | |
| (c) Decreased carbon emissions from commuting | | | |
| (d) Higher office energy consumption | | | |
| 5. What is the primary purpose of virtualization in IT systems within the context of green computing? | 1 | K1 | CO3 |
| (a) To increase the physical footprint of data centers | | | |
| (b) To reduce the number of physical servers by hosting multiple virtual machines on a single server | | | |
| (c) To enhance the graphical performance of applications | | | |
| (d) To eliminate the need for data backups | | | |
| 6. An organization plans to implement a materials recycling program for its IT equipment. Which of the following actions aligns best with green computing practices? | 1 | K1 | CO3 |
| (a) Disposing of outdated equipment in landfills | | | |
| (b) Donating used equipment to schools or non-profits | | | |
| (c) Storing obsolete equipment indefinitely | | | |
| (d) Incinerating old hardware to recover metal components | | | |
| 7. How does the Green Enterprise Transformation Roadmap benefit an organization? | 1 | K1 | CO4 |
| (a) By increasing the number of physical servers | | | |
| (b) By outlining a structured approach to reduce the organization's carbon footprint | | | |
| (c) By eliminating the need for compliance audits | | | |
| (d) By focusing solely on economic growth without environmental considerations | | | |

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| 8. Which of the following emergent carbon issues poses a significant challenge for Green IT initiatives? | 1 | K1 | CO4 |
| (a) Decreasing energy costs | | | |
| (b) Reduction in electronic waste | | | |
| (c) Rising carbon emissions from increased data center operations | | | |
| (d) Lowering global temperatures | | | |
| 9. How can Green IT strategies benefit the healthcare sector? | 1 | K1 | CO5 |
| (a) By increasing paperwork and manual processes | | | |
| (b) By enabling telemedicine and reducing hospital energy consumption | | | |
| (c) By discouraging digitalization of medical records | | | |
| (d) By eliminating the need for medical professionals | | | |
| 10. What is the primary goal of Environmentally Responsible Business Strategies (ERBS)? | 1 | K1 | CO6 |
| (a) Reducing operational costs only | | | |
| (b) Increasing the use of non-renewable resources | | | |
| (c) Minimizing environmental impact while maintaining business efficiency | | | |
| (d) Eliminating the use of technology in business | | | |

PART - B (12 × 2 = 24 Marks)

Answer ALL Questions

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| 11. Define Green computing. | 2 | K1 | CO1 |
| 12. List Green sustainable policy. | 2 | K1 | CO1 |
| 13. List the role of Green Supply Chain. | 2 | K1 | CO2 |
| 14. What are key advantages of Green Data Centers? | 2 | K1 | CO2 |
| 15. Define Green Grid frame work. | 2 | K1 | CO3 |
| 16. What are advantages of teleconferencing and teleporting? | 2 | K1 | CO3 |
| 17. Define the Green Enterprise Transformation Roadmap. | 2 | K1 | CO4 |
| 18. What are the importances of audits in Green Compliance? | 2 | K1 | CO4 |
| 19. Define Environmentally Responsible Business Strategies (ERBS). | 2 | K1 | CO5 |
| 20. List the key roles of Green IT strategies in hospitals. | 2 | K1 | CO5 |
| 21. What are the best practices for creating a green personal computer (PC)? | 2 | K1 | CO6 |
| 22. Compare and contrast Server virtualization and application virtualization. | 2 | K2 | CO6 |

PART - C (6 × 11 = 66 Marks)

Answer ALL Questions

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| 23. a) Explain the challenges of carbon foot prints in IT environment. | 11 | K2 | CO1 |
| OR | | | |
| b) Explain about the Dimensions and goals of Environmental Responsible Business. | 11 | K2 | CO1 |
| 24. a) Explain the role of Green Business Process Management. | 11 | K2 | CO2 |
| OR | | | |
| b) Illustrate about how the Green Information System play the roles in designing and developing the models which adapt the sustainable business practices. | 11 | K2 | CO2 |
| 25. a) Explain about the Virtualization in IT and how it will reduce the energy consumption and reduce carbon footprints. | 11 | K2 | CO3 |
| OR | | | |
| b) Explain about the Green Data Center. | 11 | K2 | CO3 |
| 26. a) Explain about the Green Transformation Process. | 11 | K2 | CO4 |

OR

- b) Outline the future trends in Green IT, and Elaborate how the future techniques will reduce energy consumption in the environment. 11 K2 CO4

27. a) Identify the application of Green IT strategies in home environments, focusing on energy efficiency and sustainability. 11 K3 CO5

OR

- b) Identify the importance of material recycling in Green environment, and explain how it will reduce the carbon foot prints in environment? 11 K3 CO5

28. a) Explain about the case study scenarios and trial runs in the successful implementation of Green IT strategies within businesses. 11 K2 CO6

OR

- b) Explain how the packaging industry can integrate Green IT strategies to improve environmental sustainability and reduce waste. 11 K2 CO6