

F409



(2 1/2 Hours)

[Total Marks: 75]

- N.B.
- 1) All questions are compulsory.
 - 2) Figures to the right indicate marks.
 - 3) **Illustrations**, in-depth answers and diagrams will be appreciated.
 - 4) Mixing of sub-questions is not allowed.

Q. 1 Attempt the following

(a) **Select the correct alternative**

(5M)

- (i) IT contributes about _____ % of GHG emission
a. 7-8% b. 2-3% c. 10-12% d. 15-16%
- (ii) A typical desktop uses about _____ amount of power?
a. 120 W b. 180 W c. 115 W d. 70 W
- (iii) P-State saves energy by satisfying _____ equation?
a. $P=CVF$ b. $P=CVF^2$ c. $P=C^2VF$ d. $P=CV^2F$
- (iv) _____ is one of the main ingredient of PVC?
a. Arsenic b. Vinyl Chloride c. Mercury d. Cadmium
- (v) _____ restricts the usage of hazardous substance.
a. REACH b. WEEE c. RoHS d. EPEAT

(b) **Fill in the blanks with the help of the options given in the pool below:**
(Hibernator, C6, e-commerce, C2, e-waste, server farm, grid computing)

(5M)

- (i) In _____ state CPU is in Power Down Mode.
- (ii) _____ is discarded computer parts.
- (iii) _____ is a disk array design for optimizing storage power consumption
- (iv) _____ is the process of buying and selling goods and services through computer or mobile systems via internet etc.
- (v) A server cluster is also known as _____

(c) **Answer the following in one or two lines:**

(5M)

- (i) What is Energy Star?
- (ii) What is a Green IT Audit?
- (iii) State the various states of a Hard Drive.
- (iv) What is CUE?
- (v) Define Green Washing?

Q. 2 Attempt the following (Any THREE)

(15M)

- (a) What is Green IT? What are the various IT-enabled approaches to improve environmental sustainability?
- (b) Write a short note on Holistic Approach to Greening IT.
- (c) Explain the drivers of environmental sustainability and green IT.
- (d) Explain the Life Cycle of a Device or Hardware.
- (e) Explain any two tools for tuning software for performance and energy efficiency.
- (f) State the metrics of various Software sustainability attributes.

- Q. 3 Attempt the following (Any THREE) (15M)**
- (a) What are the steps involved in developing a green IT strategy.
 - (b) Write a short note on Grid Computing.
 - (c) What are the energy implications for data centre facility infrastructure?
 - (d) State the objectives Green Networking.
 - (e) Discuss in short the business drivers of green IT.
 - (f) Write a short note on NAS.
- Q. 4 Attempt the following (Any THREE) (15M)**
- (a) What is LCA? State and explain its four stages.
 - (b) Explain in brief Energy reuse effectiveness (ERE), Data centre energy productivity (DCeP) and Data centre computer efficiency (DCcE).
 - (c) Explain the various SICT Capacity building blocks.
 - (d) Write a short note on Corporate Sustainability, Social Responsibility and IT.
 - (e) What is EPEAT? Explain its three-tiered, point-based system.
 - (f) Write a short note on SITS value curve.
- Q. 5 Attempt the following (Any THREE) (15M)**
- (a) State and explain the Three R's of Green IT.
 - (b) Discuss the environmental Impacts of IT.
 - (c) How SSD's are better than Hard Disks?
 - (d) What are the factors that drive the development of sustainable IT?
 - (e) Discuss the various software sustainability attributes.
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