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63 (FY)SEM-3/MAJ/BCAMAJ2014

2024

INFORMATION TECHNOLOGY

Paper : BCAMAJ2014

**(Indian Knowledge System
in Computer Science)**

Full Marks : 70

Pass Marks : 28

Time : Two hours

**The figures in the margin indicate
full marks for the questions.**

I. Choose the correct answer : $1 \times 10 = 10$

1. Who is known as the "Father of the Indian IT Industry"?

A. Sam Pitroda

B. Narayan Murthy

C. F.C. Kohli

D. Azim Premji

2. The first Indian supercomputer, developed in 1991, is called :
- A. PARAM 8000
 - B. EKA
 - C. ANURAG
 - D. SAGA-220
3. In which year was the Indian IT Act passed to regulate cyberspace?
- A. 1995
 - B. 2000
 - C. 2005
 - D. 2014
4. Which organization in India is primarily responsible for the development of indigenous supercomputers?
- A. C-DAC
 - B. DRDO
 - C. ISRO
 - D. BARC

5. Which Indian city is known as the "Silicon Valley of India"?
- A. Pune
 - B. Hyderabad
 - C. Chennai
 - D. Bangalore
6. In a computer, what does "GHz" measure?
- A. Processing speed
 - B. Storage capacity
 - C. Memory size
 - D. Data transfer speed
7. Which of the following devices converts digital signals to analog signals and vice versa for data transmission.
- A. Router
 - B. Modem
 - C. Hub
 - D. Switch

8. Which key combination is commonly used to open the Task manager in Windows!
- A. Ctrl + Shift + ESc
 - B. Alt + F4
 - C. Ctrl + Alt + Del
 - D. Shift + ESc
9. Which storage device has no moving parts and is known for fast access speeds?
- A. Hard Disk Drive (HDD)
 - B. Compact Disc (CD)
 - C. Solid-State Drive (SSD)
 - D. Floppy Disk.
10. Which Indian initiative aims to boost the development of AI and technology start-ups?
- A. Make in India
 - B. Digital India
 - C. Skill India
 - D. Start-up India

II. Answer the following questions : **(any five)**

2×5=10

1. How did the ancient Indian numeral system influence modern computing?
2. What was the role of Tata Consultancy Services (TCS) in shaping the Indian IT industry?
3. Define the term "Knowledge-Based Systems" in the context of the Indian Knowledge System.
4. List two significant milestones in the history of indigenous computing in India.
5. What is the significance of "Digital India" in the context of the Indian IT landscape?
6. How did Y2K influence the growth of the Indian IT industry?
7. Mention two innovations that have emerged from India's IT sector.

III. Answer the following questions : **(any six)**

5×6=30

1. Discuss the evolution of the Indian Knowledge System in computing, from ancient times to modern-day advancements.
2. Explain the significance of indigenous supercomputers like PARAM in advancing India's technological capabilities.
3. Explain the technical specifications of TIFRAC. What were its processing speed, memory capacity, and key features?
4. What contributions did Aryabhata make to the field of mathematics that are relevant to computer science, explain?
5. Analyze the impact of IT services exports on the Indian economy.
6. Discuss the role of NASSCOM in promoting the growth of the Indian IT industry.
7. Provide an overview of the technical specifications of the ISIJU computer. How did its performance compare to other computers of the time?

8. How can the Indian Knowledge System contribute to developing AI and machine learning technologies in India?
9. Describe the technical specifications and capabilities of the PARAM 8000.

IV. Answer the following questions : **(any two)**

10×2=20

1. Trace the history of computing in India, from early indigenous computing efforts to the development of modern supercomputers. Discuss the challenges and achievements in this journey and how these have shaped India's current position in global computing.
2. What are the primary applications of the Pratyush and Mihir supercomputers in India? How do they contribute to weather forecasting and climate research?
3. How did ECIL contribute to the establishment of India's early computer networking and data communication systems?

4. Discuss the evolution of the PARAM supercomputers from PARAM 8000 to the latest models. What technological advancements were made in each iteration?