Vidyalankar

S.Y. Diploma : Sem. IV [CO/CD/CM/CW/IF]

Computer Hardware & Maintenance

Time: 3 Hrs.]   Prelim Question Paper   [Marks : 100

Instructions :   (1)   All questions are compulsory.
(2)   Illustrate your answers with neat sketches wherever necessary.
(3)   Figures to the right indicate full marks.
(4)   Assume suitable data if necessary.
(5)   Preferably, write the answers in sequential order.

1.   (a) Attempt any **SIX** of the following :   **[12]**
(i)   Write any four features of PCI bus.
(ii)   What is form factor? List any two form factors of motherboard.
(iii) Write any four advantages of CRT display over LCD display.
(iv) Define RFI and Electrostatic Discharge.
(v)   Give advantages of laser printer. (Any two points)
(vi) Define Line regulation and load regulation for a power supply.
(vii) What is portioning and how is it done?
(viii) List any four USB features.

(b) Attempt any **TWO** of the following :   **[8]**
(i)   Compare interlaced and non-interlaced scanning. (Any four points)
(ii)   Compare inkjet and dot matrix printer.
(iii) List the characteristics of CRT monitors. (Any four)

2.   Attempt any **FOUR** of the following :   **[16]**
(a) Explain Real Mode.
(b) Describe the following terms related to hard disk :
Cluster, Sector, Cylinder, Track
(c) Give the functions of North and South Bridge.
(d) Draw 20 pin ATX power connector with color code. State function of PS_ON, 5VSB, PWR_OK signals.
(e) Explain BIOS and its functions.
(f) List any four advantages of optical mouse.

3.   Attempt any **FOUR** of the following :   **[16]**
(a) Difference between low level and high level formatting.
(b) Explain configuration of SCSI.
(c) Explain the sequence of events in RS- 232 communication with signals.
(d) Name two hardware tools and two software tools used for trouble shooting of PC.
(e) Explain : logic Pulser.
(f) Explain on-line UPS with block diagram.

4. Attempt any **FOUR** of the following :   **[16]**
   (a) With neat diagram explain the working of membrane switch.
   (b) With neat diagram explain the working principle of internal modem.
   (c) Give the signal voltages for following colors of ATX connectors :
       Red, Black, Orange and Purple
   (d) Give beep indicators of POST.
   (e) Explain blackout, brownout, surge and spike.
   (f) Draw the diagram of centronics interface and explain function of any four
       signals.

5. Attempt any **TWO** of the following :   **[16]**
   (a) Name different types of key switches in keyboard. Explain the principle of
       working of any one in detail.
   (b) Describe Real and virtual Real mode of processor in detail.
   (c) Describe frequency modulation (FM) and modified frequency modulation
       (MFM) method of recording with suitable example.

6. Attempt any **TWO** of the following :   **[16]**
   (a) With suitable block diagram, describe the construction of CDROM drive.
   (b) Give any 8 blue ray disk specifications.
   (c) What is cache hit and cache miss? Describe L1, L2 and L3 cache.

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