FACULTY OF ENGINEERING & TECHNOLOGY

SYLLABUS

FOR

DIPLOMA COURSE IN COMPUTER MAINTENANCE
(FULL TIME)

(SEMESTER – I & II)

SESSION: 2019–20

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GURU NANAK DEV UNIVERSITY
AMRITSAR
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DIPLOMA COURSE IN COMPUTER MAINTENANCE
(FULL TIME) (SEMESTER SYSTEM)

SCHEME

Semester – I:

Paper No.	Subjects	M. Marks
Paper – 1	Computer Organization and Assembling	75
Paper – 2	PC Maintenance and Troubleshooting – I	75
Paper – 3	Lab – I: Based on PC Assembling & Troubleshooting–I	50

Eligibility: 10+2 (any stream)

DIPLOMA COURSE IN COMPUTER MAINTENANCE
(FULL TIME) (SEMESTER – I)

Paper–1: Computer Organization and Assembling

Time: 3 Hrs.   **Max. Marks: 75**

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Section–A

- **Top Level View of Computer Function & Interconnection:**
  Computer Component, Functions, Interconnection Structure, Bus Interconnection.
- **Computer Arithmetic:** ALU, Integer Representation, Integer Arithmetic, Floating Point Representation, Floating Point Arithmetic.

Section–B
- **Basics Computer Organization & Design**: Instruction Codes, Computer Registers. Computer Instructions, Timing and Control, Instruction Cycle, Memory Reference Instruction.

Section–C
- **Micro Programmed Control:** Control Memory, Addressing Sequence, Micro Program Example, Design of Control Unit.
- **CPU:** Stack Organization, Instruction Format, Addressing Modes, Data Transfer and Manipulation, RISC

Section–D
- **I/O Organization:** Asynchronous Data Transfer, Modes of Transfer. Priority Interrupt, DMA, IOP

- **PC Assembling:** Introduction of Motherboards, Power Supply, RAM, Drivers, Keyboard, Monitor, Processors and assembling the Computer System.

References:
Computer Architecture: Morris Mano– Pearson Education– 3rd Edition 1993
PC Upgrade & Maintenance Guide : Mark Minasi. – BPB Publishers – 15th Edition 2004

DIPLOMA COURSE IN COMPUTER MAINTENANCE
(FULL TIME) (SEMESTER – I)

Paper–2: PC Maintenance & Troubleshooting – I

Time: 3 Hrs.   **Max. Marks: 75**

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Section–A

- **Troubleshooting General PC Problems:** Introduction, General Troubleshooting rules, Common Problems & Solutions, Preventive Maintenance.

Section–B

- **BIOS:** Typical Motherboard BIOS, BIOS Features, BIOS & Boot Sequences, BIOS Shortcoming & Compatible Issues, BIOS Troubleshooting, BIOS Upgrades.

Section–C

- **Hard Disk:** Introduction, Disk Basics, Disk Performance & Characteristics, Drive Construction,

Section–D
- **Hard Disk:** Drive Testing & Troubleshooting.

References:
1. Upgrading & Repairing PCs : Muller – Prentice Hall – 10th Edition, 2000.
2. Complete PC Upgrade & Maintenance Guide : Mark Minasi–BPB Publishers 15th Edition, 2004.

DIPLOMA COURSE IN COMPUTER MAINTENANCE
(FULL TIME) (SEMESTER – I)

Paper – 3

LAB–I: Based on PC Assembling & Troubleshooting–I

Time: 3:00 Hrs. **Marks: 50**

DIPLOMA COURSE IN COMPUTER MAINTENANCE
(FULL TIME) (SEMESTER SYSTEM)

SCHEME

Semester – II:

Paper No.	Subjects	M. Marks
Paper – 1	Network Operating Systems	75
Paper – 2	PC Maintenance and Troubleshooting – II	75
Paper – 3	Lab – II: Network Operating Systems	50

DIPLOMA COURSE IN COMPUTER MAINTENANCE
(FULL TIME) (SEMESTER – II)

Paper–1: NETWORK OPERATING SYSTEMS

Time: 3 Hrs.   **Max. Marks: 75**

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Section–A
Introduction of various Network Operating Systems (Windows 9x/XP/2000/NT)

Introduction to Windows 2003 server, Window 2003 features, Hardware requirements, planning the network, Windows 2003 network security model, special purpose servers, licensing.

Section–B
Planning storage strategies, options, working with disk administrator and backup.

Networking and Network protocols Configuration of Windows 2003.

Windows 2003 services Architecture and security Architecture, planning and managing group and user accounts File services, distributed file system, remote administration, remote access services, Internet & Intranet. Printing and supporting network clients, performance tuning.

Section–C
Introduction to Windows NT, features, Hardware requirements. Windows NT services Architecture and security Architecture, planning and managing group and user accounts File services. Installation of Windows NT.
Section–D
Concept of distributed Networks, E mail & Internet Technology.

Text & Reference Books:

1. Windows NT 4 The Complete Reference by Sybex Publisher:– BPB 1999.
2. Inside Windows Server 2003: William Boswell Publisher: Pearson 2003.

DIPLOMA COURSE IN COMPUTER MAINTENANCE
(FULL TIME) (SEMESTER – II)

Paper–2: PC Maintenance & Troubleshooting – II

Time: 3 Hrs. **Max. Marks: 75**

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Section–A
- **Motherboard & Buses:** Introduction, Motherboard Components, Expansion Slots system Bus Functions & Features. Upgrading & Troubleshooting Motherboard, General Bus Troubleshooting.

Section–B
- **Basic Memory Concepts:** Introduction, Installing Memories, Upgrade Options & Strategies, Replacing Memories with Higher Capacity. Troubleshooting Memory.

Section–C
- **Printers:** Printer Technology, How Printer Works, Attaching Printer, Installing Printer Drivers, Preventive Maintenance, Common Printer Problems & Solution

Section–D
- **Error Code:** Beep Code, Post Code, Post Reader Card.

References:
1. Upgrading & Repairing PCs : Muller – Prentice Hall – 10th Edition, 2000.
2. Complete PC Upgrade & Maintenance Guide : Mark Minasi–BPB Publishers 15th Edition, 2004.

DIPLOMA COURSE IN COMPUTER MAINTENANCE
(FULL TIME) (SEMESTER – II)

Paper–3

LAB–II: Based on Network Operating Systems

Max. Marks: 50   **Time: 3.00 Hrs**