

PUNJABI UNIVERSITY PATIALA

ORDINANCES  
AND  
OUTLINES OF TESTS,  
SYLLABI AND COURSES OF READING  
FOR  
B.Sc. (Computer Maintenance)  
Part-III (Annual)  
FOR  
2012, 2013 & 2014 EXAMINATIONS

## ORDINANCES

### **FOR B.Sc in Computer maintenance (B.C.M )**

#### **(UNDER THE +3 SCHEME)**

Notwithstanding the integrated nature of a course spread over more than one academic year, the Ordinances in force at the time a student joins a course shall hold good only for the examination held during or at the end of year. Nothing in these ordinances shall be deemed to debar the University from amending the ordinances subsequently and the amended ordinances, if any, shall apply to all the students whether old OR new.

1. As the course is divided into three Parts (Part-I, II and III), the instructions will be spread over three years and the medium of instructions for the Course shall be English. The annual examination for each Part will be conducted in the month of April or as fixed by the Academic Council.
2. Candidate shall be required to complete the B.C.M. Course in a maximum period of six years.
3. The supplementary examination shall be held in September or as fixed by Academic Council. This examination shall be open to candidates who have been declared 'reappear' in one subject.
4. The examination in Part-I ,Part-II and Part-III shall be open to a person who satisfies the requirements at 'A' and 'B'.

‘A’

#### **FOR B.C.M. Part-I Examination**

Candidates should have passed at least one academic year previously the +2 examination of Punjab School Education Board or any other examination recognized as equivalent thereto with any subjects.

#### **FOR B.C.M. Part-II Examination**

Has passed, at least one academic year previously the B.C.M.-I examination of this university or any other statutory University.

OR

Has been declared to reappear in not more than one subject in B.C.M. Part -I examination of this university or any other statutory University but such a candidate shall have to clear the reappear paper in the supplementary examination of the same year or simultaneously with B.C.M. Part-II annual examination failing which his results for B.C.M. part-II examination shall also stand cancelled.

For the purpose of awarding degree to the candidates who have passed their B.C.M. Part-I examination from other University, their marks in B.C.M. Part-I examination shall be increased/decreased proportionately to bring them at par with the marks of this University. Candidates who have passed B.C.M. Part-I examination from any other University shall be awarded the degree after raising/reducing proportionately the marks secured by such a candidate in B.C.M. Part-I examination with a view to bringing his score at par with the marks allotted to the respective subject (s) in the corresponding examination of this university.

### **B.C.M. Part-III Examination**

Has passed one academic year previously B.C.M. Part-II examination of this university or any other statutory University.

Note: A candidate who passes B.C.M. Part-I examination in supplementary Exam. With a special chance cannot appear in the next subsequence annual examination of B.C.M. Part-III.

OR

Has been declared to 'reappear' in not more than one subject in B.C.M. Part -II examination of this university or any other statutory University but such a candidate shall have to clear the 'reappear' paper in the supplementary examination in the same year or simultaneously with B.C.M. Part-III examination failing which his result for Part-III examination shall also stand cancelled.

#### **'B'**

- (I) (i) has remained on the rolls of a college admitted to the privileges of the University throughout the academic year preceding the examination,  
(ii) is certified by the Principal of the College :

\*(a) that during the academic year he has attended in each 'subject not less than 75% of the total number of lectures delivered; (a) lectures periods and (b) practicals / map work periods. (The college shall be required to deliver at least 75% of the total number of periods prescribed for each subject),

(b) that he has obtained in an House Examination at least 33% marks in the aggregate of all the subjects or 25% in each subject. The Principle, at his discretion, may allow a special test to candidates who could not appear in the House examination owing to unavoidable reasons or fail to secure the minimum marks indicated above.

(II) has completed the prescribed course of instruction for the examination but has not appeared or having appeared has failed in the examination. Such a candidate may appear in the subsequent annual examination.

5. The pass and reappear in one subject students of Part I & II from Panjab University and Guru Nanak Dev University shall be treated at par with the corresponding students of this university. The marks secured by such students shall be scaled up/down to the marks allotted to each subject by this University.

The candidates who after passing Part-I and Part-II examination from a college affiliated to some other University, are admitted to Part-II and Part-III class in colleges affiliated to this University.

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\*(i) Every candidate will be required to attend a minimum 75% of lectures/ periods delivered to that class in each paper. Teaching/Seminars/Tutorial/ Guided Library Reading

Period of one hour's duration —1 attendance

Practical one period may be  
of 2-3 hours duration —1 attendance (Contd/.. on next page)

6. A deficiency in class lecture attendances may be condoned on account of special reasons as provided in the ordinances.
7. Application for admission to the examination shall be made on the prescribed form countersigned by the authorities as mentioned in the relevant ordinances and as specified in the examination form.
8. Amount of examination fee to be paid by a candidate for each part shall be prescribed from time to time.

9. Application for admission to the examination shall be made on the prescribed form countersigned by the authorities as mentioned in the relevant ordinances and as specified in the examination form.

10. Amount of examination fee to be paid by a candidate for each part shall be prescribed from time to time.

(Contd/.. from last page)

Note : Teaching Weeks in an academic Year =25

Required Credit Hours (CH) per week for student = 25

1 Credit Hour (CH) = 1 Lectures contact hour (LCH)

=1Seminar/Tutorial/Guided Library Reading

Contact Hour (STGRCH)

= 2 Practical contact Hours (PCH)

In the Department, where there is separate period for Guided Library Reading, the attendance shall be 75%, like the attendance of each paper and will be " considered like a paper of separate Unit,

(ii) In case of students, whose names are struck off from the rolls due to non-payment of fee, and are admitted later on, their attendance shall not be counted for that period,

(iii) The shortage in the attendance of lectures will be condoned as per rules made by the University from time to time.

11. The last date by which admission forms and fees must reach the Registrar shall be as follows :

| <b>Annual Examination</b>        | Without Late Fee          | With Rs.800/- Late Fee    | With Rs.1200/- Late Fee   | With Rs. 5000/- Late Fee  | With Rs. 10,000/- Late Fee |
|----------------------------------|---------------------------|---------------------------|---------------------------|---------------------------|----------------------------|
| <b>Regular Students</b>          | 21 <sup>st</sup> December | 12 <sup>th</sup> January  | 12 <sup>th</sup> February | 28 <sup>th</sup> February | 15 <sup>th</sup> March     |
| <b>Private Students</b>          | 15 <sup>th</sup> October  | 15 <sup>th</sup> November | 15 <sup>th</sup> December | 15 <sup>th</sup> January  | 15 <sup>th</sup> March     |
| <b>Supplementary Examination</b> | 15 <sup>th</sup> July     | 31 <sup>st</sup> July     | 16 <sup>th</sup> August   | 31 <sup>st</sup> August   | 10 <sup>th</sup> September |

12. The medium of examination shall be English except non-English language subjects.

13. Punjab History and Culture in the lieu of Punjabi shall be allowed to the following categories of candidates :

1. Candidates who have passed their Matriculation examination from a School located outside the State of Punjab.
2. Candidates who have passed their Matriculation examination from a School located in the State of Punjab will not be allowed to take up the subject of Punjab History & Culture in lieu of Punjabi Compulsory at the graduate level. This clause will not apply to students covered by clause No. 3 given below.
3. Children of Defence personnel/Para military personnel (serving as well as retired) will be allowed to take up the subject of Punjab History & Culture, provided the father or the mother/guardian (in case father is deceased) of the candidate gives an affidavit that the candidate has not studied Punjabi at the School level.

14. The minimum number of marks required to pass the examination in each Part shall be 35% in

each subject, provided that in subject with practical the percentage shall be required separately in written and practical/map work.

15. The candidate shall also be entitled to grace marks as admissible under the ordinances, relating to the 'Grace Marks'.

16.(i) A candidate who fails in only one subject may be allowed exemption in other subjects and he may clear that one subject in two consecutive subsequent chances i.e. at the supplementary of the same year and failing that at the next annual examination.

(ii) Such a candidate shall not be eligible to join the next higher class or appear in the next examination.

(iii) A candidate passing the examination under Ordinance 15 shall not be eligible for any Scholarship, Prize or Medal.

17. The successful candidates shall be classified on the basis of aggregate marks secured in Part-I, II and III taken together as under :

(a) 75% or more in the first division with distinction.

(b) 60% or more in the first division.

(c) 50% or more but less than 60% in *the* second division.

(d) Below 50% in the third division.

18. The Registrar shall publish the result of the examination as soon as possible. The successful candidates shall be awarded a degree stating the division, percentage of marks and medium.

19. A person who has passed B.C.M +3 examination from this University may be allowed to reappear as a private candidate in part I, II and III (separately or simultaneously) examination in the same subjects for improving his performance. For this purpose he shall be given two chances within a period of two years for the date of passing B.C.M +3 examination. Such an examination shall be considered minor.

Provided that no one has passed an examination higher than M.Sc or equivalent shall be allowed to improve his performance in B.C.M.

## SYLLABUS

### B.SC. (COMPUTER MAINTENANCE) PART III (ANNUAL)

#### OUTLINE OF PAPERS AND TESTS

#### B.C.M THIRD YEAR 2012, 2013 & 2014 EXAMINATIONS

| CODE    | TITLE OF PAPER  | MAXIMUM MARKS  |                        |                     |               |          |
|---------|---|----------------|------------------------|---------------------|---------------|----------|
|         |   | Hours per Week | University Examination | Internal Assessment | Marks Allowed | Max Time |
| BCM-301 | Microprocessors- II   | 4              | 80                     | 20                  | 100           | 3Hrs     |
| BCM-302 | Computer hardware maintenance<br>Motherboard, Basic Troubleshooting | 4              | 80                     | 20                  | 100           | 3Hrs     |
| BCM-303 | Computer Networks   | 4              | 80                     | 20                  | 100           | 3Hrs     |
| BCM-304 | Linux Administration  | 4              | 80                     | 20                  | 100           | 3Hrs     |
| BCM-305 | Fault Diagnosis   | 4              | 80                     | 20                  | 100           | 3Hrs     |
| BCM-306 | Internet and Web Technologies                                       | 4              | 80                     | 20                  | 100           | 3Hrs     |
| BCM-307 | Hardware Lab-I (Linux Administration)                               | 4              | 50                     |                     | 50            | 3Hrs     |
| BCM-308 | Hardware Lab-II (Computer Maintenance & Fault Diagnosis)            | 4              | 50                     |                     | 50            | 3Hrs     |
| TOTAL   |   |                |                        |                     | 700           |          |

#### Note:

1.The break up of marks for the practical will be as under

- |                                       |          |
|---------------------------------------|----------|
| i)Lab record                          | 10 Marks |
| ii)Viva voice                         | 10Marks  |
| iii)Program Development and Execution | 30Marks  |

2.The break up of marks for internal assessment for theory papers will be as under :

- |  |         |
|--|---------|
| i)One or two tests out of which minimum one best will be considered for assignment | 10Marks |
| ii)Assignment /Quizzes   | 5 Marks |
| iii)Attendance, Class Participation and Behavior                                   | 5 Marks |

## **BCM-301: MICROPROCESSOR-II**

Maximum Marks: 80

Maximum Time: 3 Hrs

Min Pass Marks: 35%

Lectures to be delivered: 90 Hrs

### **(A) INSTRUCTION FOR THE PAPER SETTER**

The question paper will consist of five sections A, B, C, D and E. Section A, B, C and D will have two questions from the respective section of the syllabus. Section E will consist of 8-10 short answer type questions which will cover the entire syllabus uniformly. All the Sections carry equal marks.

### **(B) INSTRUCTION FOR THE CANDIDATES**

Candidates are required to attempt one question each from the section A, B, C and D of the question paper and the entire section E.

#### **Section A**

##### **Introduction:**

Features of 8086, Comparison between 8085 and 8086, internal architecture of 8086, register organization, 8086 pin diagram, minimum and maximum modes, memory segmentation.

#### **Section B**

##### **Programming the 8086:**

Addressing modes, instruction format, instruction set: data transfer instructions, arithmetic and logic instructions, and program control instructions.

Programming exercises based on the instruction set and use of assembler.

#### **Section C**

##### **Memory Interface:**

Introduction, memory devices, address decoding, 8086 8-bit and 16-bit memory interface.

##### **Basic I/O Interface:**

Introduction to I/O interface, I/O port address decoding, The Programmable Peripheral Interface (82C55)

#### **Section D**

##### **Interrupts:**

Basic Interrupt processing, hardware interrupts, 8259A Programmable Interrupt Controller.

**32-bit microprocessors:** Introduction to 80386, 80486 and Pentium Microprocessors.

##### **Text Books:**

1. The Intel Microprocessors 8086/8088, 80186/80188, 80286, 80386, 80486, Pentium and Pentium Pro Processor Architecture, Programming, and Interfacing by Barry B Brey, PHI.

## **BCM-302: Computer Hardware Maintenance Motherboard Basic Troubleshooting**

Maximum Marks: 80

Maximum Time: 3 Hrs

Min Pass Marks: 35%

Lectures to be delivered: 90 Hrs

### **(A) INSTRUCTION FOR THE PAPER SETTER**

The question paper will consist of five sections A, B, C, D and E. Section A, B, C and D will have two questions from the respective section of the syllabus. Section E will consist of 8-10 short answer type questions which will cover the entire syllabus uniformly. All the Sections carry equal marks.

### **(B) INSTRUCTION FOR THE CANDIDATES**

Candidates are required to attempt one question each from the section A, B, C and D of the question paper and the entire section E.

#### **Section A**

Hardware Basics: Basic terms, concepts, and functions of system modules (System board, firmware, storage devices, monitor, LCD and portable systems, boot process, ports).

#### **Popular CPU Chips and their Characteristics:**

Processor Terminology, Processor speed, Data bus, Address bus, Registers, Cache memory, Math co-processor, Chip types, Early Intel Processors.

Idea about faster microprocessor motherboard 80286, 80386, 80486, Pentium. Idea about data flow. Function of different chips in motherboard.

#### **Section B**

#### **Performing Preventative Maintenance:**

Preventative Maintenance, Using Preventative Maintenance Tools, Materials and equipment, Software utilities, Maintaining Environmental Controls, Ventilation and airflow, Humidity and liquids, ESD, Dirt and dust, EMI, Power, UPS, and suppressors, Completing Maintenance Tasks, Case and components, Power supplies, Monitors, Keyboards and mice, Drives, Storage media, Laptops, Printers and scanners.

#### **Section C**

#### **Troubleshooting Procedures and Guidelines:**

Identifying Troubleshooting Tools, Hardware tools, Diagnostic software, The Art of Troubleshooting, Troubleshooting basics, Physical environment, Audio and visual troubleshooting, CMOS and BIOS, Motherboard, Processor/memory, Floppy drive, Hard drives, CD/DVD-ROM, Keyboard and mouse, Sound card/audio, Monitor/video, Modem, Serial and parallel ports, USB, Power supplies and batteries, Laptops.

## **Section D**

Switch Mode Power Supply: Circuit diagrams and pin assignments, working of SMPS Input and load requirements, connecting a PC and peripherals to power supply.

Power Supply Maintenance: Cautions about opening power supply, over voltage and over current protection. Upgrading power supply, various test for fault tolerance. Problem of dissimilar earth and loose connection protecting the PC from AC.

### **Text Books:**

1. A+ Certification Bible
2. CompTIA A+ Certification All-in-One Desk Reference for Dummies

## **BCM-303: Computer Networks**

Maximum Marks: 80

Maximum Time: 3 Hrs

Min Pass Marks: 35%

Lectures to be delivered: 90 Hrs

### **(A) INSTRUCTION FOR THE PAPER SETTER**

The question paper will consist of five sections A, B, C, D and E. Section A, B, C and D will have two questions from the respective section of the syllabus. Section E will consist of 8-10 short answer type questions which will cover the entire syllabus uniformly. All the Sections carry equal marks.

### **(B) INSTRUCTION FOR THE CANDIDATES**

Candidates are required to attempt one question each from the section A, B, C and D of the question paper and the entire section E.

#### **Section A**

**Network Basics:** What is network, use of computer networks, applications of network, LAN, MAN & WAN, Network services.

**OSI Models:** OSI reference model, Concepts of all layers of OSI Model, TCP Model, IP Model, Comparison of TCP/IP model and OSI model.

#### **Section B**

**Data Communication:** Transmission Media, Transmission frequencies, Cable Media, Wireless Media, Public & Private network services, Network Topologies, Network Types.

**Switching:** Circuit switching, packet switching, message switching

#### **Section C**

**Network Connectivity:** Network connectivity devices, NICs, Hubs, Repeaters, Bridges, Gateways, Modems, Routers, IP addressing, subnet addresses.

**MAC protocols:** CSMA, Aloha, Pure and slotted. Internet Protocols, ICMP.

**Fast Ethernet:** MAC sublayer, Physical Layer .SMTP, HTTP ,FTP.

#### **Section D**

Types of attacks, Information security services, model for internetwork security, OSI Security Architecture, Conventional Encryption: Conventional Encryption Model, Steganography, Classical Encryption techniques: Substitution techniques, Transposition Techniques.

Intrusion detection, password management, Viruses and related Threats, Virus Counter measures, Firewall Design Principles, Trusted Systems.

#### **Recommended books:**

Computer Networks by Andrew S. Tanenbaum

Computer Networks & Internets by D.E. Comer

**Text Book:** Cryptography and Network Security by William Stallings, 2<sup>nd</sup> Edition, Pearson Education.

## BCM-304: Linux Administration

Maximum Marks: 80

Maximum Time: 3 Hrs

Min Pass Marks: 35%

Lectures to be delivered: 90 Hrs

### (A) INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of five section A, B, C, D and E Section A,B,C and D will have two question from the respective section of the syllabus. Section E will consist of 8-10 short answer type questions which will cover the entire syllabus uniformly. All the Sections carry equal marks.

### (B) INSTRUCTION FOR THE CANDIDATES

Candidates are required to attempt one question each from the section A, B, C and D of the question paper and the entire section E

#### Section A

**Administration:** Add and remove Users, Modify User Configuration, creating groups and delete groups, Mounting and Unmounting file systems The Multi-User system, Common shell Usage. Connecting to Remote systems telnet, the tar command. The tar Command, The Run Levels of Init, Starting and stopping services, print spools and Queues, gzip, gunzip command, setting system name.**Configuration installing Xfree86:** Installing Xfree86 manually, installing Xfree86 using script, Set up Remote access, set Environment Variables, configure Basic Network Services, Configure Network Services, configure internet Services, Check and Size Swap space, Manage printing, boot loader Lilo, grub, The Basic Configuration Files, Configuration of Access Rights. Install and Uninstall Modules.

#### Section B

**System Maintenance:** Device Nodes, Making disk Partitions, Making a file system, crontab, core files, Processes system log files, Backup and Restore.

**LAN with Linux:** Choosing NIC, selecting boot protocol, static IP and DHCP, testing network, manual network configuration, configuring samba.

#### Section C

**Connecting Linux to internet,** what is PPP, PPP connection, point to point network, server client network, Linux File server, Linux print server, Linux.

#### Section D

**Web Server:** What is web server, Linux web server, installing Apache, configuring apache, managing web server, Mail serve, Firewall testing and troubleshooting, netstart command, ping, traceroute commands, FTP.

#### Reference Books:

- 1 Professional Linux Kernel Architecture by Wolfgang Mauerer
- 2 The Linux Networking Architecture by Klaus Wehrle
- 3 Red Hat Enterprise Linux & Fedora Edition: The Complete Reference by Richard Petersen

## BCM-305: Fault Diagnosis

Maximum Marks: 80

Maximum Time: 3 Hrs

Min Pass Marks: 35%

Lectures to be delivered: 90 Hrs

### (A) INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of five section A, B, C, D and E Section A, B, C and D will have two question from the respective section of the syllabus. Section E will consist of 8-10 short answer type questions which will cover the entire syllabus uniformly. All the Sections carry equal marks.

### (B) INSTRUCTION FOR THE CANDIDATES

Candidates are required to attempt one question each from the section A, B, C and D of the question paper and the entire section E

#### Section A

**Origin of Faults:** Classification of software and hardware faults, origin of faults –dry solder, supply failure, faults in PCB design, chip component failure, short circuit, mounting, earthing faults due to specific environment – dust, temperature, humidity, static and electromagnetic.

**Function Board Testers:** Digital test equipments test requirements –device testing, bread board testing, in circuit testing, functional testing system, field testing and servicing, major considerations of functional testers –general configurations. Comparative and stored program, driversensor pin electronics, programming aids, methods of fault locations, flexibility tester portability and data communication facilities, test economies.

#### Section B

**Testing Boards Containing LSI/VLSI Devices:** Problem introduced by LSI/VLSI devices, testing specific LSI/VLSI devices. Fixed memory failure modes such as incorrect addressing, incorrect chip select and incorrect contents in cell matrix. Failure mode and testing techniques such as simple read/write, diagonal pattern or walk pattern, marching pattern, galloping pattern, nearest neighbor disturb pattern, general point. Microprocessor devices check-outs such as architectural check-out sequence, incorrect codes check-out. Receiver transmitter devices, controller device general purposes test strategy for LSI, VLSI devices, printer related errors –dot matrix, laser, inkjet.

#### Section C

**Follow –up of circuit Diagram with Actual Circuit:** Identify the ICs buses on the circuit diagram Vs actual location on the circuit board Understand the errors of the hard disk (Winchester, IDE, SCSI), floppy drivers (1.44MB, 1.2MB, 360KB, 760KB) , Cartridge tape driver, CD drivers, digital audio tape drive, Ethernet card failure, fax card modem, serial and parallel port errors, display port errors, super I/O board error, keyboard error, mouse error, memory related errors.

## **Section D**

**Network Trouble Shooting Techniques:** Trouble shooting process, Trouble shooting tools Software, Operating system related errors of LINUX, DOS, Windows, Identify DBMS errors, virus errors.

### **Practicals:**

Students must be exposed to defect hardware failure, networking trouble shooting and identifying virus problems. Students must be exposed to introducing commands of UNIX, DOS and Windows.

### **Recommended books:**

- 1 Digital board testing by Sanjeev sehgal, Kataria publication

## **BCM-306: Internet and Web Technologies**

Maximum Marks: 80

Maximum Time: 3 Hrs

Min Pass Marks: 35%

Lectures to be delivered: 90 Hrs

### **(A) INSTRUCTION FOR THE PAPER SETTER**

The question paper will consist of five section A, B, C, D and E Section A, B, C and D will have two question from the respective section of the syllabus. Section E will consist of 8-10 short answer type questions which will cover the entire syllabus uniformly. All the Sections carry equal marks.

### **(B) INSTRUCTION FOR THE CANDIDATES**

Candidates are required to attempt one question each from the section A, B, C and D of the question paper and the entire section E

#### **Section A**

**Internet Basics:** Specification and technical details for establishing Internet. Types and functions of modems, IP addressing, internet domains, domain name server, TCP/IP protocols, Internet service providers, Intranets

**Internet Connectivity:** Telephone line, cable, leased line, ISDN, VSAT, RF link

#### **Section B**

**World Wide Web (WWW):** World Wide Web and its evolution, web page, web server, HTTP protocol. Examples of web servers. Navigation Tools: Netscape and Internet Explorer to surf Internet, Uniform Resource Locator (URL). Hypertext, hyperlinks and hypermedia, URL, its registration, browsers, search engines, proxy servers

#### **Section C**

**Internet Security:** Basics of authentication and authorization. Introduction to firewall, various techniques of encryption and decryption, SSL (Secure Socket Loyer)

**Internet Applications:** E-mail, Telnet, FTP, IRC, NNTP, Video conferencing, e-commerce

#### **Section D**

**Developing Portals Using HTML:** Basic structure of HTML, designing a web page, inserting links images, horizontal rules, comments. Formatting text, title, headings, colours, fonts, sizes, simple tables and forms. HTML tags, hyperlinks. Adding graphics and images, image maps, image files. Using tables, forms, style sheets and frames

**Using Front Page:** Front page editor, Front page explorer & introduction to other scripting languages like using VB Scripts /ASP/ CGI.

**Recommended books:** Internet and Web Technologies by Raj kamal

## **BCM-307: HARDWARE LAB-I (Linux Administration)**

Maximum Marks: 50

Maximum Times: 3 Hrs

Min Pass Marks: 35%

Lectures to be delivered: 90 Hours

This laboratory course will comprise of exercises to supplement what is learnt under paper BCM-304

1. Creating and deleting user accounts.
2. Creating and deleting groups.
3. Creating and deleting user accounts.
4. Mounting and unmounting in Linux.
5. Installing and configuring Xfree86.
6. Managing network using Linux.
7. Configuring samba.
8. Setting up Linux file and print server.
9. Installing and configuring Apache web server.
10. Using FTP in Linux.

## **BCM-308: HARDWARE LAB-II (Computer Maintenance & Fault Diagnosis)**

Maximum Marks: 50

Maximum Times: 3 Hrs

Min Pass Marks: 35%

Lectures to be delivered: 90 Hours

This laboratory course will comprise of exercises to supplement what is learnt under paper BCM-303 & BCM-305.

1. Measurement of current, voltage and capacitance.
2. Testing semiconductor diodes and their characteristics.
3. Study of Logic Gates
4. Analysis of various parts of computer.
5. Computer assembly
6. Setting up BIOS
7. Analysis of various types of Motherboards
8. Measurement of voltage at different section of motherboard
9. Jumper setting / Dip switch setting
10. Measurement of voltage at different color wires of SMPS
11. Measurement of Power good signal.
12. Analysis of power supply , Horizontal and Vertical sections of monitor.
13. Simulated faults on above section and their rectification.
14. Analysis of various types of printers ( Ink Jet ,DMP, Laser etc.)
15. Analysis of various types of connections ( USB, Serial, Parallel)
16. Preventive maintenance of printer.
17. Installing RAM
18. Installation of HDD, FDD, CD drives.
19. Partitioning and formatting hard disk drives.

**Partial List of Books:**

1. Computer organization, moris mano, phi
2. All about FDD, Manohar Lotia, BPB
3. All about HDD, Manohar Lotia BPB
4. Electronic devices and ckts, Allen mottershead ,PHI
5. Upgrading and repairing pc , scott Mueller .PHI
6. Computer pc upgrade and maintenance guide, mark minasi .BPB
7. Computer monitor servicing manua, manohar Lotia BPB
8. All about key board and mouse manohar Lotia BPB
9. All about printers manohar Lotia BPB
10. Inside the pc, peter Norton PHI
11. Introduction to micro processor ,L.A.Laventhal.PHI
12. Integrated circuit Botkar , hanna publisher
13. Linux complete reference.

