Memo No.: L/Secy/104/2007                           14.08.2007
From : Dr. Debasish Sarkar
Secretary
West Bengal Council of Higher Secondary Education
Vidyasagar Bhavan, Salt Lake
Kolkata – 700 091

To : The Head of the Institution

Subject: Modified Annual Working Plan

Sir / Madam,

In modification of our earlier circular no L/Secy/73/2007 dated 21.05.2007 the modified working plan is given below for smooth running of your institution and sequential coordination of the activities relating to the West Bengal Council of Higher Secondary Education.

Strict adherence to the schedule is extremely urgent for the interest of the system.

Your kind cooperation is solicited.

Thanking you,

Yours truly,

Secretary

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Revised Question Structure
ENGLISH B
Class – XI

● PROSE
1. { Answer the following questions } (1 x 4 = 4)
   i)   ii)  iii)  iv)

2. { Answer any two }{ each in about 30 words } (3 x 2 = 6)
   i)   ii)  iii)  iv)

3. { Answer any two }{ each in about 50 words } (5 x 2 = 10)
   i)   ii)  iii)  iv)

● POETRY
4. { Answer the following questions } (1 x 4 = 4)
   i)   ii)  iii)  iv)

5. { Answer any two }{ each in about 30 words } (3 x 2 = 6)
   i)   ii)  iii)  iv)

6. { Answer any two }{ each in about 50 words } (5 x 2 = 10)
   i)   ii)  iii)  iv)

● RAPID READER
7. (A) { Answer the following questions } (1 x 11 = 11)
   i)   ii)  iii)  iv)  v)  vi)  vii)  viii)  ix)  x)  xi)

(B) { Answer the following questions }{ each in about 30 words } (3 x 3 = 9)
   i)   ii)  iii)

(C) { Sequence Test } (1 x 5 = 5)

8. Textual Grammar: 15
9. Paragraph Writing 10
10. ESP 10

---------------------------- X ------------------------------

N.B.: Questions of one mark each may follow the pattern of objective type questions. This is in partial modification of the earlier guideline provided in Curriculum and Syllabus of English-B.
• PROSE
1. { Answer the following questions } (1 x 4 = 4)
   i) ii) iii) iv)

2. { Answer any two } { each in about 30 words } (3 x 2 = 6)
   i) ii) iii) iv)

3. { Answer any one } { each in about 50 words } (5 x 1 = 5)
   i) ii) iii) iv)

• POETRY
4. { Answer the following questions } (1 x 4 = 4)
   i) ii) iii) iv)

5. { Answer any two } { each in about 30 words } (3 x 2 = 6)
   i) ii) iii) iv)

6. { Answer any one } { each in about 50 words } (5 x 1 = 5)
   i) ii) iii)

• DRAMA
7. { Answer four } (1 x 4 = 4)
   i) ii) iii) iv) v) vi) vii) viii)

8. { Answer any two } { each in about 30 words } (3 x 2 = 6)
   i) ii) iii) iv)

9. { Answer any one } { each in about 50 words } (5 x 1 = 5)
   i) ii) iii)

10. Textual Grammar: 15

11. Letter Writing 10

12. ESP 10

13. (A) { Answer the following questions } (1 x 7 = 7)
    i) ii) iii) iv) v) vi) vii) viii)

(B) { Answer the following questions } { each in about 20 words } (2 x 4 = 8)
   i) ii) iii) iv)

(C) { Sequence Test } (1 x 5 = 5)

---------------------------- X -----------------------------

N.B.: Questions of one mark each may follow the pattern of objective type questions. This is in partial modification of the earlier guideline provided in Curriculum and Syllabus of English-B.
A. **Brief Review of Computer Systems:**

i) **Computer Organization:** (10 Marks)
   - History of Computers
   - Computer Generations
   - Functions of Computer
   - Block Diagram of a Computer System
   - Brief description of each functional block of a computer –
     - Input Devices (Keyboard, Mouse, Touch Screen, OMR, OCR, MICR, Punch Tape, Punch Card, Graphic Tablet, Barcode Reader, Light Pen)
     - Output Devices (Monitor – CRT, LCD; Printer)
     - CPU (CU, ALU)
     - Memory – Primary [ROM (PROM,EPROM, EEPROM), RAM (SRAM, DRAM)] and Secondary( HDD, FDD, CD-ROM) and Cache Memory
     - Bus : Definition and Types

ii) **Data Representation:** (8 Marks)
   - Number Systems – Decimal, Binary, Octal and Hexadecimal Number
   - Conversion (whole numbers and fractions) of
     - Binary to Decimal, Octal, Hexadecimal and vice versa
   - Addition, Subtraction, Multiplication, Division in all the above number systems
   - Different methods of Negative Number Representation
     - Signed Magnitude
     - One’s Complement
     - Two’s Complement

iii) **Topics on Boolean Algebra:** (12 Marks)
   - Logical Operations – OR, AND, NOT logic
   - Laws and Identities of Boolean Algebra
   - De’ Morgan’s Theorems and Basic Principle of Duality
   - Proof using Identities and Truth Tables
   - Combinational logic functions, SOP and POS expressions
   - Logic Gates – OR, AND, NOT, XOR, X-NOR Gates
   - Universal Gates – NAND and NOR Gate; Basic gates using Universal Gates
   - Simple combinational circuit design using gates and simple cases of minimization
   - Combinational Circuits (conversion is not necessary)
     - Half Adder & Full Adder (definition and representation)
     - Half Subtractor & Full Subtractor (definition and representation)
     - Multiplexer (4x1) and Demultiplexer (1x4)
     - Decoder and Encoder (Maximum 3 bits)
   - Multiplication and Booth’s Algorithm

B. **Operating Systems:** (10 Marks)
   - Function and role of Operating System
   - Booting(cold and hot)
   - Directory and File Structure, Path and Pathname
   - File naming system, System files, Batch files, executable files
   - Familiarities with different commands and utilities of MS-DOS and MS-Windows
   - Familiarities with GUI
   - Study of UNIX / Linux with respect to commands and utilities

C. **Programming in C:** (30 Marks)
   - Concept of Algorithm and Flowchart (Time & Space requirements)
   - Introduction to C
   - Character Sets, Keywords, Constants, Variables, Operators in C
   - Data types in C
   - Header files
   - Input/Output operations
   - Control structures
   - Loop structures
   - Array
   - String
   - Functions (user-defined and common library functions) including recursive function
   - Structures
   - Simple problem solving
A. Familiarization with Computer System and MS Windows-(5 Marks)
B. MS-DOS / UNIX / LINUX Operating System Commands-(5 Marks)
C. Programming in C (Algorithm, Flow Chart, Coding, Execution) (10 Marks)
D. Laboratory Copy - (5 Marks)
E. Viva Voce (5 Marks)
Detailed Syllabus of Computer Science
Class XII  
Theory - 70 Marks

A. Fixed and Floating Point Representation of Real Numbers, Bit Map Representation (5 Marks)

B. Sequential Logic Circuits: (10 Marks)
   - Concept of Asynchronous and Synchronous
   - Positive and Negative Edge Triggers
   - Flip Flops
      - NAND and NOR gate SR Flip Flops (Asynchronous & Synchronous)
      - D, JK, Master-Slave, & T Flip Flops
   - Serial and Parallel Registers
      - SISO, SIPO, PIPO, PISO
   - Asynchronous and Synchronous Counters
      - Ripple Counter (up/down)
      - Decode Counter
      - Ring Counter

C. Programming in C: (10 Marks)
   - Pointers in C
   - Manipulation of Data Structures in C
      - Single Linked List – Create, Display, Add, & Delete Nodes from a List
      - Stack using Arrays; Push and Pop Operations
      - Queue using Arrays; Store and Retrieve Operations
      - Creating Stack and Queue using Linked List
   - I/O File Handling in C (Text Files and Binary Files)

D. Computer Networking: (20 Marks)
   - Introduction to Networking
      - Utility of Networking- importance and application areas
      - Simplex, Half Duplex and Full Duplex Communication
      - Analogue and Digital Communication
   - Types of Network- LAN, MAN, WAN, Client Server & Peer-to-Peer Networks
   - Serial and Parallel Communication
   - Bandwidth, Channel Capacity, Baud
   - Synchronous and Asynchronous Transmission Modes
   - The OSI Model (Networking Layers)
   - Components of a Network
      - Guided and Unguided Media (Cables – UTP, STP, Co-axial, Fibre Optic; Infrared, Radio, & Microwave Communication, Satellite)
   - Network Topologies – Bus, Ring, Star, Multipoint or Mesh
   - Network Connecting Devices – Hub, Repeater, Bridge, Switch, Router, Gateways
   - Dial-up and Leased line concepts and functions of MODEM
   - IP Addressing – Class A, Class B, Class C IP addresses
   - Introduction to Internet and Intranet
      - TCP/IP Model
      - Basic requirement for connecting to the Internet, ISP
      - Domain Naming System: ISDN and URL
      - Services provided by Internet – WWW, Browser, E-mail, FTP, HTTP, Telnet, Search Engine
   - Network Security – Concept of Firewall, Password, Smart Card

E. Introduction to DBMS (Relational): (25 Marks)
   - DBMS
      - Introduction – Goals, Purpose of using DBMS
      - Disadvantages of File System and Advantages of DBMS
      - Architecture of DBMS
      - Components of DBMS [Software components - DDL, DML, DBM and DBA and Storage components – DD and Data files]
   - Data Models
      - Entity Relationship Model
         - Entity and Entity Sets
         - Attributes
         - Relationships
         - Domain
         - ER Diagram
      - Relational Model
         - Tuple
         - Keys – Super Key, Candidate Key, Primary Key, Foreign Key
         - Constraints – Entity Integrity Constraint, Key Constraints
- Database Normalization
  - Database Anomalies – Insertion, Update, Deletion Anomalies
  - Functional Dependency and Transitive Dependency
  - Normal Forms: First, Second and Third Normal Forms

- Relational Algebra
  - Selection operator
  - Projection operator
  - Rename operator
  - Unions
  - Intersections
  - Set Difference
  - Natural Join – Inner Join and Outer Join

- Physical Storage and File Organisation
  - Primary Storage, Secondary Storage, Disk Pack
  - Access Time – Seek time, Latency, Transfer rate
  - Fixed-length record, Variable-length records
  - Implementation techniques: Byte-string representation, Fixed-length representation
  - File Organization: Serial, Sequential, Indexed Sequential, Hashing
  - Indexing – Primary and Secondary Indexing.

- SQL
  - Schema
  - Create Table, Alter Table, Delete Table
  - Domains and Data Types
  - Column Constraints
  - SQL Commands: INSERT, DELETE, UPDATE, ALTER, DROP
  - Query – SELECT Queries, Nested Queries
  - Query Processing: Purpose, Steps, Algorithms, External sorting, Searching
  - Report generation

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**Detailed Syllabus of Computer Science**

**Class XII**

**Theory - 70 Marks**

- Database Normalization
  - Database Anomalies – Insertion, Update, Deletion Anomalies
  - Functional Dependency and Transitive Dependency
  - Normal Forms: First, Second and Third Normal Forms

- Relational Algebra
  - Selection operator
  - Projection operator
  - Rename operator
  - Unions
  - Intersections
  - Set Difference
  - Natural Join – Inner Join and Outer Join

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  - Query Processing: Purpose, Steps, Algorithms, External sorting, Searching
  - Report generation

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**Detailed Syllabus of Computer Science**

**Class XII**

**Practical - 30 Marks**

A. Programming for manipulating Data structures and File handling using C Language (10 Marks)

B. SQL Query and Web page design using HTML (5 Marks)

C. Project Work using C Language / MS Access (5 Marks)

D. Laboratory Copy (5 Marks)

E. Viva Voce (5 Marks)
Detailed Syllabus of Modern Computer Application  
Class XI  
Theory - 70 Marks

A. Brief Review of Computer Hardware: (10 Marks)
- History of Computers
- Computer Generations
- Functions of Computers
- Block Diagram of a Computer System
- Brief description of each functional block of a computer –
  - Input Devices (Keyboard, Mouse, Touch Screen, OMR, OCR, MICR, Punch Tape, Punch Card, Graphic Tablet, Barcode Reader, Light Pen)
  - Output Devices (Monitor – CRT, LCD; Printer)
  - CPU (CU, ALU)
  - Memory – Primary (RAM, ROM) and Secondary (HDD, FDD, CD-ROM) and CACHE
  - BUS- Definition and types
- Multimedia System- Basic concepts and its uses

B. Data Representation: (10 Marks)
- Number Systems – Decimal, Binary, Octal and Hexadecimal
- Conversion (whole numbers and fractions) of
  - Binary to Decimal, Octal, Hexadecimal and vice versa

C. Topics on Boolean Algebra: (10 Marks)
- Logical Operations – OR, AND, NOT logic
- Laws and Identities of Boolean Algebra
- De' Morgan's Theorems and Basic Principle of Duality
- Proof using Identities and Truth Tables
- Combinational logic functions- Simple SOP and POS expressions
- Basic Logic Gates – OR, AND, NOT, XOR, X-NOR Gates
- Universal Gates – NAND and NOR Gate, Basic Gates using Universal Gates

D. Concepts of Computer Software & Languages: (15 Marks)
- Importance of Software
- Types of Software: System Software (compiler, debugger, interpreter, linker, loader and operating systems), Application Software (definition and example) and utility software (definition and example)
- Operating System overview (MS-DOS and MS-Windows)
- Programming Languages: Concepts of High Level, Low Level and Assembly language
- Generations of Programming Languages
- Programming Languages used for problem solving: scientific, commercial and data manipulation - Concept of Graphical User Interface(GUI) languages

E. Data Processing: (10 Marks)
- Difference between Data and Information
- Information
  - Need for Information
  - Qualities of Information
  - Value of Information
  - Categories of Information
  - Levels of Information
- Data
  - Types of Data
  - Logical and Physical Concepts of Data
  - Data Processing System/Cycle
  - Data Processing Operations
  - Data Validation
- Human Being as an information processor
- Primary Storage, Secondary storage.
- Directories and Folders

F. Packages: (15 Marks)
- Introduction to Word Processing – MS Word: (10 Marks)
  - Creating, Opening, Editing and Saving a document
  - Copy, Cut, Paste operations
  - Page Setup, Headers and Footers
  - Formatting Texts, Paragraph, Page Borders
  - Inserting Clip-Art, Word-Art, Auto-Shapes, Picture, Symbol, Equation
  - Table insertion
  - Mail Merge
  - Macros
  - Spelling and Grammar check
  - Printer Setup and Document Printing
### Detailed Syllabus of Modern Computer Application

**Class XI**

#### Theory - 70 Marks

- **Introduction to PowerPoint** (5 Marks)
  - Creating, Opening, Editing and Saving a PowerPoint presentation
  - Use of Wizards
  - Different styles and background
  - Formatting Texts
  - Inserting Clip-Art, Word-Art, Auto-Shapes, Picture
  - Applying slide transition, applying animation to text and objects
  - Inserting sound and video clips
  - Slide Show
  - Printing of slides

### Detailed Syllabus of Modern Computer Application

**Class XI**

#### Practical - 30 Marks

A. Familiarization with Computer System and Peripherals and Windows Operating System and MS-DOS (5 Marks)

B. Use of MS Word – Same features as in Theory part (10 Marks)

C. Use of PowerPoint – Same features as in Theory part (5 Marks)

D. Laboratory Copy (5 Marks)

E. Viva-voce (5 Marks)
A. Basic Concepts: (5 Marks)

- Simple Binary Arithmetic – Addition, Subtraction, Multiplication, Division
- Different methods of Negative Number Representation
  - Signed Magnitude
  - One’s Complement
  - Two’s Complement
- ASCII codes for character and text representation

B. Logic Functions: (5 Marks)

- Simple combinational circuit design using gates and simple cases of minimization
- Combinational Circuits (conversion is not necessary)
  - Half Adder & Full Adder (only definition and representation)
  - Half Subtractor & Full Subtractor (only definition and representation)
  - Multiplexer (4x1) and Demultiplexer (1x4)
  - Decoder and Encoder (maximum 3-bits)

C. Data Processing: (5 Marks)

- File Organization: Serial, Sequential, Indexed Sequential
- Record Structures
  - Fixed-length record
  - Variable-length records

D. Computer Networking: (20 Marks)

- Introduction to Networking
  - Utility of Networking (importance and application areas)
  - Types of Network (LAN, MAN, WAN)
  - Point-to-Point & Multipoint Communication and concept of client-server
  - Network Topology (Bus, Ring, Star, Mesh or Multipoint)
  - The OSI MODEL (Networking layers)
- Concept of Internet and intranet
  - Dial-up and Leased line connections
  - ISP and URL
  - Services provided by Internet – WWW, Browser, E-mail
  - Web page design using HTML

E. Database Concepts: (20 Marks)

- Introduction to Database
  - Introduction & Goals, Purpose of using DBMS
  - Disadvantages of File System and Advantages of DBMS
  - Different Data Key: Super key, Candidate Key, Primary Key, Foreign Key
- Introduction to Access
  - Table creation using Design View and Wizard
  - Different data types in Access
  - Manipulation of data using Access facilities – Inserting, Updating, Deleting data
  - Creating Relationships between Tables
  - Form creation using Design View and Wizard
  - Query generation using Design View and Wizard
  - Report generation using Design View and Wizard

F. Spreadsheet: (15 Marks)

- Introduction to Excel
  - Concept of Workbook, Worksheet, Row, Column, Cell
  - Creating, Opening, Editing, Saving a Workbook
  - Changing Row and Column widths
  - Formatting cells
  - Different data types in Excel
  - Entering labels and values
  - Use of formulas – SUM, PRODUCT, AVERAGE, MAX, MIN, ROUND, COUNT, COUNTIF, CONCATINATE, AND, OR, NOT, RAND, SQRT, STDEVA
  - Copying Cells – Relative and Absolute referencing
  - Making calculations and re-calculations
  - Conditional Formatting
  - Sorting and Filtering Data
  - Hiding Rows and Columns
  - Use of Macros
  - Creating Line Diagrams, Pie Charts, Bar Graphs
A. **Project Work: (10 Marks)**

- Study of Systems related to School, Town, Village, Local Industries, People
  
  Using **Access** creation of Database and populating Tables, Data Manipulation, Report Generation
  
  OR
  
  Using **Excel** creation of Mark Sheet, Balance Sheet, Monthly/Yearly Expenditure, Reports
  
- Webpage design and implementation
  
  Note: On the day of the practical examination, students have to demonstrate on the project work submitted by them.

B. **Practical Examination: (10 Marks)**

- Study of email – email send/receive, use of search engine, collecting information from web
- Using MS-Access and MS-Excel
- Creating a Web Page

C. **Sessional: Laboratory Notebook (5 Marks)**

D. **Viva Voce: (5 Marks)**