



West Bengal Council of Higher Secondary Education

VIDYASAGAR BHAVAN

9/2, BLOCK-DJ, SECTOR-II, SALT LAKE,
KOLKATA – 700 091

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Memo No.: L/Secy/105 /2007

Dated : 14.08.2007

From: **Dr. Debasish Sarkar**
Secretary
West Bengal Council of Higher Secondary Education
Vidyasagar Bhavan, Salt Lake, Kolkata – 700 091

Changed Address of M.R.O.

W. B. C. H. S. E.
MEDINIPUR REGIONAL OFFICE
JACK PAUL BHAVAN
RAJA N.L. KHAN ROAD (Nannurchwk)
PO+DIST - PASCHIM MEDINIPUR , PIN - 721101

To: **The Principal/Headmaster/Headmistress**

Subject : Guidelines regarding Annual Examination of Class XI and Higher Secondary Examination of 2008.

Respected Sir/Madam,

This is to inform you that the West Bengal Council of Higher Secondary Education will organize **Camps all over West Bengal on 15.11.2007** in connection with the distribution of the following:

- Registration Check List for the session 2007-2008.**
- Blank Enrolment Form for Regular Candidates 2008.**
- Practical Question Papers, Marks Foil, etc. of Higher Secondary Examination-2008.**
- Blank Answer Scripts, Top-sheets, etc. for Practical Higher Secondary Examination-2008.**

You are requested to collect the above materials from your respective Camp on 15.11.2007(Thursday).

- You are requested to do every necessary correction in the **Registration Check List and the same is to be submitted to the respective Regional Office of the Council strictly between 06.12.2007 and 24.12.2007.**
- Institution-wise practical question papers, blank answerscripts for practical examination, practical ASR, marks foil and other relevant papers of Higher Secondary Practical Examination-2008 will be supplied through **camp, scheduled to be held on 15th November 2007.**
- Please note that-
 - The candidates who have qualified the Test Examination are only eligible to appear at the Higher Secondary Practical Examination-2008.
 - At the time of appearing at the practical examination the candidate should clearly write the Registration Number with year on the practical answer scripts and after evaluation of the answerscripts, their marks should be submitted to the Council through the pre-printed marks foil prepared on the basis of the Registration Number only.
 - The Practical Examination of all Laboratory based subjects of Higher Secondary Examination-2008 shall have to be **completed within 19th January 2008.**
 - After completion of the practical examination, the written answer-scripts, practical ASR, marks foils, and other related papers shall have to be **deposited to the offices mentioned below within 21st January 2008 positively:**
 - Institutions under North Bengal, Medinipur and Bardhaman Regional Offices of the Council should submit the practical answerscripts and other relevant post examination documents to the respective Regional Offices of the Council.
 - Institutions under Kolkata Regional Office will submit their practical scripts and other related papers to the Answer Paper Section of the Higher Secondary Council at Vidyasagar Bhavan as usually done in the previous years.
- The **Project Marks of Environmental Education** is to be submitted in the following manner:
 - For **Regular Candidates:** Project Marks obtained by the candidates (out of 60 marks) are to be mentioned in the **prescribed box provided in the lower part of the Enrolment Form for Regular candidates.**
 - For **Continuing Candidates:** Project Marks (marks secured by the candidates out of 60 marks) to be mentioned in the **pre-printed proforma sheet** supplied by the Council (at the time of distribution of the PPS result of 2007) **and to be submitted to the Council along with the Enrolment Form of the Continuing candidate** to the council.

c. For **Special Candidates**: Project Marks (out of 60) of the candidates failed in Environmental Education in Higher Secondary Examination 2007 is to be mentioned in the pre-printed proforma sheet supplied by the Council (at the time of distribution of the PPS result of 2007) **and to be submitted to the Council along with the Enrolment Form of the Special candidate** to the council.

3) This is also for your information that the Annual Examination of Class-XI will be conducted following the existing procedure of Higher Secondary Examination excepting the system of evaluation of the answer scripts. After completion of the Annual Examination of Class XI of a particular subject, answer scripts must be collected from the venues by the authorised persons of the respective institutions. The script should be evaluated and the respective Institutions will arrange to publish the results internally. Results of Class XI should be sent to the Council within 5th May, 2008 addressed to

The Assistant Secretary (Confidential-I)
West Bengal Council of H.S., Education
Vidyasagar Bhavan,
9/2, Block-DJ, Sector-II, Salt Lake, Kolkata-700091

in the existing **Format of the Result** supplied by the Council earlier. It may be noted that the evaluated answerscripts of the Annual Examination of Class XI should be preserved in the school till **30th September 2008**.

4) The Centre Secretary of the Main Venue for Class XI Annual Examination will be paid Rs. 5000/- (Five thousand) only as grant and Rs. 500/- (Five hundred) only will be paid to each Head of the Institution to collect the answer scripts of the Annual Examination of Class XI from the Venues to the respective School.

5) You are further informed that the Council will supply the blank answer scripts for the theoretical and practical papers of Annual Examination of Class XI.

6) Please note that the Council has amended the rule in respect of offering Languages under Group-A & Group-B as prescribed in the Admission Regulation under Schedule II.

Following the amendment a candidate is eligible to offer any language under Group-A or Group-B as first or second language in which he/she passes the Madhyamik or Equivalent examination. Out of the two compulsory languages, one must be English.

7) Please note the revised fees of Continuing and Special candidates of H.S. Examination under New Syllabus:

- Lab-based Continuing Candidates..... Rs. 160/- and with Late fee Rs.200/-
- Non-Lab based Continuing Candidates..... Rs. 150/- and with Late fee Rs 190/-
- Special Candidates..... (for both Lab and Non-Lab based Subjects) Rs. 90/- and with Late fee Rs. 130/-
- Re. 1/- (One) only will be deducted by the Institutions from each case.

8) Please note that the allotted **time** for holding **Practical Examination under New Syllabus** should have to be maintained strictly as follows:

a. PHYS/CHEM/BIOS/GEGR/HOMN/NUTN/PSYC/STAT/GEOL/AGNM: **Allotted Time: 2 Hrs**

b. FACR/MUSC/COMS/COMA: **Allotted Time: 3 Hrs**

9) Please note that the Annual Examination 2008 will follow the same concept of main venue / venue.

10) Enclosed please find the copy of revised question pattern of English-B.

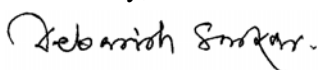
11) Enclosed please find the copy of the detailed syllabus of Computer Science and Modern Computer Application.

12) Please note that the Higher Secondary Council has restructured the Text Books in the form of Class XI and XII and **assigned the New Text Book Number** (a list of **recommended Text Books** is enclosed herewith)

You are requested to follow the information / instructions for having exact coordination between the Council and the Institute.

Thanking you,

Yours truly,



Secretary

West Bengal Council of Higher Secondary Education



West Bengal Council of Higher Secondary Education
VIDYASAGAR BHAVAN
9/2, BLOCK-DJ, SECTOR-II, SALT LAKE
KOLKATA – 700 091

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,

Debasish Sarkar

Secretary

Sl No	DESCRIPTION: Class XI: Registered for the Session 2007-2008	D A T E
1	DISTRIBUTION OF THE REGISTRATION FORM	14.06.2007 onwards
2	Last date of Receiving the REGISTRATION FORM by the WBCHE	Without Late Fine: 12.09.2007 To 18.09.2007
		With Late Fine: 19.09.2007 To 25.09.2007
3	Submission of Consolidated Subject-wise Statement of Student reading in Class-XI (preferably with the submission of the Registration Form)	Within 25.09.2007
4	DISTRIBUTION OF THE REGISTRATION CHECK LIST (Class-XI) from WBCHE	15.11.2007 : Camp
5	SUBMISSION OF THE CHECK LIST BY THE INSTITUTION TO THE WBCHE	From 06.12.2007 To 24.12.2007
6	ANNUAL EXAMINATION – Class - XI	11.03.2008
7	PUBLICATION OF RESULT of Class - XI	4 th Week of April 2008
8	INTRODUCTION OF Class - XII	1 st Week of May 2008
DESCRIPTION: Class XII: Registered for the Session 2006-2007		
9	DISTRIBUTION OF BLANK ENROLMENT FORM FOR Continuing and Special Candidates	03.08.2007 onwards
10	SUBMISSION OF FILLED UP ENROLMENT FORM (Continuing and Special Candidates)	Without Late Fine: 31.08.2007 To 07.09.2007
		With Late Fine: 10.09.2007 To 17.09.2007
11	DISTRIBUTION OF: a) BLANK ENROLMENT FORM for Regular Candidates b) HS PRACTICAL QUESTION PAPER, MARKS FOIL Etc. c) BLANK ANSWER SCRIPTS, TOP SHEET Etc. for HS:2008 Exam	15.11.2007 : Camp
12	SUBMISSION OF FILLED UP ENROLMENT FORM for Regular Candidates	Without Late Fine: 17.12.2007 To 24.12.2007
		With Late Fine: 02.01.2008 To 09.01.2008
13	PRACTICAL EXAMINATION TO BE COMPLETED	By January 19, 2008
14	ANSWER SCRIPTS, MARKS FOIL & ASR (PRACT) of the Candidates appearing at the H S Examination : 2008 BE SUBMITTED TO THE COUNCIL	By January 21, 2008
15	ISSUANCE OF THE ADMIT CARD	4 th Week of February, 2008 onwards
16	HIGHER SECONDARY EXAMINATION	11.03.2008
17	PUBLICATION OF THE Higher Secondary Result	By June 10 of 2008

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.

Revised Question Structure

ENGLISH B

Class – XII

• 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 any 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)

- (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)

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, Updation, 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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- 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)

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)