# DEPARTMENT OF COMPUTER SCIENCE

## COURSE CURRICULUM & MARKING SCHEME

# B.Sc. I & II Semester
# INFORMATION TECHNOLOGY
## (Based on Choice Based Credit System)

**SESSION : 2022-23**

ESTD: 1958


## GOVT. V.Y.T. PG AUTONOMOUS COLLEGE, DURG, 491001 (C.G.)

(Former Name – Govt. Arts & Science College, Durg)

NAAC Accredited Grade $A^+$, College with CPE - Phase III (UGC), STAR COLLEGE (DBT)

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# Govt. V.Y.T. PG Autonomous College Durg (CG)

## SCHEME OF EXAMINATION
## &
## SYLLABUS

**of**

**Choice Based Credit System(CBCS)**
**for**
**B.Sc. I & II Semester**
**(Information Technology)**

**Department of Information Technology**

**Session – 2022-23**

**(Approved by Board of studies)**

# Course Structure for CBCS
# B.Sc.(IT)- I Semester

| S.No | Course Type | Course-code | Subject | Periods | | | Credit | ESE Max Marks | Internal Marks | Practical Marks | Total Marks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | L | T | P | | | | | |
| 1. | CC-1 | BIT-101(L) | Fundamental of IT | 5 | 1 | | 4 | 50 | - | - | 50 |
| | | BIT - 102(P) | Fundamental of IT Lab | | | 3X2 | 2 | - | - | 50 | 50 |
| 2. | SEC-I | BIT - 103(L+P) | Web Designing with HTML | 1 | | 1x2 | 2 | 30 | | 20 | 50 |
| TOTAL | | | | | | | | | | | 150 |

# Course Structure for CBCS
# B.Sc.(IT)- - II Semester

| S.No | Course Type | Course-code | Subject | Periods | | | Credit | ESE Max Marks | Internal Marks | Practical Marks | Total Marks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | L | T | P | | | | | |
| 1. | CC-2 | BIT--201(L) | Programming in C Language | 5 | 1 | | 4 | 50 | - | - | 50 |
| | | BCS - 202(P) | Programming in C Language Lab | | | 3X2 | 2 | - | - | 50 | 50 |
| 2. | SEC-II | BCS - 203(L+P) | Programming in Java | 1 | | 1x2 | 2 | 30 | | 20 | 50 |
| TOTAL | | | | | | | | | | | 150 |

**The syllabus for B.Sc. (IT) is hereby approved for the session 2022-23.**

**Name and Signatures**

V.C. Nominee .....

Subject Expert ..... (D.D.Rao)

Subject Expert.....

Alumni(member).....

Prof. from other Dept. of Sc. Faculty .....

Specialist from Industry .....

**Departmental members**

1. HOD- Mr. Durgesh Kumar Kotangle.....
2. Mr. Dileep Kumar Sahu.....
3. Mrs. LatikaTamrakar..... 25/4/22

# GOVT. V.Y.T. PG. AUTONOMOUS COLLEGE DURG
## DEPARTMENT OF COMPUTER SCIENCE
## B.Sc. (IT) -I Semester
## Session 2022-2023

| Part A: Fundamentals of IT | | | | |
|---|---|---|---|---|
| Program: **B.Sc.-IT** | | Class: **B.Sc.-IT – I SEMESTER** | Year: **2022** | Session:**2022-2023** |
| 1 | Course Code | **BIT-101(L)** | | |
| 2 | Course Title | **Fundamentals of IT** | | |
| 3 | Course Type | **Core Course** | | |
| 4 | Pre-requisite (if any) | None | | |
| 5. | **Course Objectives** | Introduce the fundamentals of computer, Number system various memory devices and introduction to Operating System introduction and Data Communication and provide hands-on use of Microsoft Office applications Word, Excel, Access and PowerPoint,MS Access. | | |
| 6. | **Course Outcome** | At the end of this course, the students will be able<br>**On successful completion of the course, thestudentwillbeableto:**<br>• Understand the history and various generations of computer, characteristics of computer and its types, logic gates, number system<br>• Understand Concept of Operating System and its features.<br>• Understand the basic computer network technology<br>• Understand the concept and Features of MS-Word and MS-Excel.<br>• Understand the concept and Features of MS-Power point and MS-Access. | | |
| 6 | **Credit Value** | **Theory: 4** | | |
| 7 | **Total Marks** | **Max. Marks: 50** | **Min Passing Marks: 17** | |

| Unit | Part B - Topics |
|---|---|
| I | **UNIT – I** Introduction to Computers: Introduction, Characteristics of Computers, Block diagram of computer. Types of computers and features, Mini Computers, Micro Computers, Mainframe Computers, Super Computers. Types of Programming Languages (Machine Languages, Assembly Languages, High Level Languages). Data Organization, Drives, Files, Directories.<br>Types of Memory (Primary and Secondary) RAM, ROM, PROM, EPROM. Secondary Storage Devices (FD, CD, HD, Pen drive)I/O Devices (Scanners, Plotters, LCD, Plasma Display) Number Systems Introduction to Binary, Octal, Hexadecimal system Conversion. |
| II | **Operating System and Data Communication**– History, Files and Directories, Internal and External Commands, Batch Files, Types of O.S.Windows Operating Environment Features of MS – Windows, Control Panel, Taskbar, Desktop, Windows Application, Icons, Windows Accessories, Notepad, Paintbrush etc.<br>Use of communication and IT, Communication Process, Communication types-Simplex, HalfDuplex, Full Duplex, Communication Protocols, Communication Channels - Twisted, Coaxial, Fiber Optic, Serial and Parallel Communication, Modem |

| | |
|---|---|
| | - Working and characteristics, Types of network Connections - Dialup, Leased Lines, ISDN, DSL, RF, Broad band, Types of Network - LAN, WAN, MAN, Internet, VPN etc., Topologies of Components of LAN -Media, NIC, NOS, Bridges, HUB, Routers, Repeater and Gateways. |
| III | **MS-Word**<br>Introduction to word processing software and it's features, creating new document, saving document opining and printing document. ***Home Tab*** : setting fonts, paragraph settings various styles (normal no spacing, heading1, heading2, title, strong), find & replace, format painter, copy paste and paste special. ***Insert tab :***Pages, tables, pictures, clipart, shapes, header & footer, word art, equation and symbols. ***Page Layout Tab :***Page setup, page background, paragraph (indent and spacing).***Mailing Tab:*** create envelops and labels, mail merge. ***Review Tab:*** spelling and grammar check, new comment, Protect document, ***View Tab:*** document views, zoom, window (new window, split, switch window). |
| IV | **MS-Excel**<br>Introducing Excel, use of excel sheet, creating new sheet, saving, opening, and printing workbook, **Home Tab**: Font, alignment, number, styles and cells and editing, conditional formatting. **Insert Tab:** Table, charts (column chart, pie chart, bar chart, line chart) and texts (header * footer, word art, signature line). **Page Layout Tab**: page setup options, scale to fit (width, height, scale). **Formulas Tab :**Auto sum (sum, average, min, max), logical (IF, and, or, not, true, false), math & trig (sin, cos tan, ceiling, floor, fact, mod, log), watch window. **Data Tab**: get external data from MS Access, sort and filter options, Data validation, group and ungroup. **Review Tab:** protect sheet, protect workbook, share workbook. **View Tab**: page breaks, page layout, freezing panes, split and hide. |
| V | **MS-Power Point and MS Access**<br>Introducing power point, use of power point presentation, creating new slides saving, opening, and printing. ***Home Tab :***new slide, layout, reset, delete, setting text direction, align text, convert to smart art, drawing options. **Insert Tab :**Table, picture, clipart, photo album, smart art, shapes and chart, movie and sound, hyperlink and action, text box, word art, object. ***DesingTab :***page setup options, slide orientation, applying various themes, selecting background style and formatting it. ***Animations Tab :***custom animation for entrance, exit and emphasis, applying slide transition, setting transition speed and sound, animation on rehears timing. ***Slide show & view Tab :***start slid show options, setup option. ***View Tab :***presentation views, colours and window option.<br>Introduction to MS Access, The Tables of a Database, Introduction to the Record of a Table, Introduction to Controls Design, Details on Controls Design, The Characteristics of a Table, The Characteristics of a Form, The Characteristics of a Window Control, Data Controls, |

## Part C -Learning Resources

Text Books, Reference Books, Other Resources

**TEXT BOOK:**

1. Computer Fundamentals Architecture and Organization, B. Ram, New Age International Publishers,
   FifthEdition.
2. Computer Fundamentals, P. K. Sinha, BPB Publications, Sixth Edition.
3. Introduction to Information Technology, V. Rajaraman, PHI, Second Edition.
4. Digital Fundamental, Thomas L. Floyd , Pearson Publications , Eleventh edition
5. Fundamental of Information Technology, ChetanShrivastava, Kalyani Publishers.

**E-learning Resources:**

1. https://www.w3schools.blog/computer-fundamentals-tutorial
2. https://www.javatpoint.com/digital-electronics
3. https://vikaspedia.in/education/digital-litercy/it-literacy-courses-in-associating-with-msup/computer-fundamentals
4. https://www.geeksforgeeks.org/introduction-of-sequential-circuits/
5. https://nptel.ac.in/courses/108105132

| | |
|---|---|
| **V.C. Nominee** ..... | **Departmental members** |
| **Subject Expert** ..... (D.P.Rao) | 1. **HOD- Mr. Durgesh Kumar Kotangle**..... |
| **Subject Expert**..... | 2. **Mr. Dileep Kumar Sahu**..... |
| **Alumni(member)**..... | 3. **Mrs. Latika Tamrakar**..... |
| **Prof. from other Dept. of Sc. Faculty** ..... | |
| **Specialist from Industry** ..... | |

# GOVT. V.Y.T. PG. AUTONOMOUS COLLEGE DURG
## DEPARTMENT OF COMPUTER SCIENCE
## B.Sc. (IT) -I Semester
## Session 2022-2023
## COURSE CODE: BIT-102 (P)
## LAB I: Fundamentals of IT LAB

| Course Objectives | CourseOutcomes |
|---|---|
| Objective of this course is:<br>1. To enabling the students in crafting professional word documents Excel spread sheets, power point presentations using the Microsoft suite of office tools.<br><br>1. To familiarize the students in preparation of documents and presentations with office automation tools. | **On successful completion of the course, thestudentwillbeableto:**<br><br>**CO1:** Understand creating and formatting basic documents in word processor software with their properties.<br>**CO2:** Understand the creating and using formulas and charts in worksheets<br>**CO3:** Able to create presentations and can apply various animations on it.<br>**CO4:** Understand the creating and using structure query language queries in database |

1. **Scheme of Examination:-Practical examination** will be of 3 hours duration. The distribution of practical marks will be as follows:

| | | |
|---|---|---|
| **Programme 1 ( MS-Office)** | **-** | **10** |
| **Programme 2 ( MS-Office)** | **-** | **10** |
| **Programme 3 ( MS-Office)** | **-** | **10** |
| **Viva- Voice** | **-** | **10** |
| **[Practical Copy + Internal Record]** | **-** | **10** |
| **Total** | **-** | **50** |

**2** In every program there should be comment for each coded line or block of code.
**3** Practical file should contain printed programs with name of author, date, path of program, unit no. and printed output.
**4** All the following programs or a similar type of programs should be prepared.

## List of Practical

**MS- WORD**

**File New, Open, Save, Cut, Copy, Paste, Drag Drop, Bullets and Numbering, Undo, Redo, Find, Replace, Paragraph Formatting, Character Formatting and Page Formatting.**

1. Open a document. Type the following text and perform the tasks as instructed below:-

**Working with Word Processor**

As already mentioned, a word processor is a package that processes textual matter and creates organized and flawless documents. In addition to it a word processor not only remote all the limitations of typewriter but also offers various useful features that cannot be even dreamt of with typewriter.
Also if same textual matter is to be reproduced with minor changes, retyping the only option in typewriters.
The word processing (and word processor) originated way back in 1964 when special typewriters. Magnetic Tape Selectric typewriters (MIST) were launched by IBM (International Business Machines).

(i) Insert the following text after the first paragraph
The main components of a word processing system are listed below:
a. Computer
b. Printer
c. A word processing software
(ii) Save the document as Word1.doc
(iii) Move the second paragraph to the end of the document. Using darg& drop.
(iv) Move the second paragraph in the end of the document using cut, paste operations.
(v) Undo the above actions.

(vi) Now use Redo actions
(vii) Go to the End of the document ( in one step)
(viii) Go to the Beginning of document ( in one step)
(ix) Insert page break before the third paragraph.
(x) Search the word "computer: in your document with options Match case, find whole words only.
(xi) Replace the word "typewriters" with "word processor"
(xii) Undo the above action
(xiii) Remove All page breaks from your document
(xiv) Change the magnification of your document to different percentages using zoom features.
(xv) Format the above written paragraphs and give the options as follows:

- Alignment justified
- Indentation: left 0.2 right:0.2
- Spacing: before 6 pt. after:6 pt.
- Special: first line by :0.4"
- Line spacing 1.5 lines.

(xvi) Set the default tab stop to 0.3"
(xvii) Set the margins to 1.25
(xviii) Format the page using
a. Left margin:0.5, right margin: 0.5
b. Top margin:1.5, bottom margin:0.5
c. Gutter Margin: 1indentation: left 0.2 right:0.2
d. Header Margin:0.5
(xix) Format the each occurrence of group of words 'Word Processor' as bold, italic, under line and small caps
(xx) using find and replace with formatting options.
(xxi) Align the heading to Center and make it bold, underlined and italicized.

**File New, Open, Save, Find, Replace, Paragraph Formatting, Character Formatting and Page Formatting.**

2. Type the text as show below and perform the tasks as directed:

Computers
COMPUTER is an electronic device that processes data and gives meaningful information. Computers are being used in almost all the fields today
EXPERT SYSTEMS
HUMAN THINKING AND ARTIFICAL INTELLIGENCE
Can computer think?
AI at work Today: Natural Language programs and Expert Systems.
THE IMPACT OF COMPUTERS ON PEOPLE
The Positive Impact
The Potential Dangers
THE IMPACT OF COMPUTERS ON ORGANIZATIONS
The information Processing Industry
The Positive impact on Using Organizations
The Potential Dangers for Using Organizations

1. Search for the word 'Computer' in the entire document. All the occurrences of the given word are to be searched irrespective of the case.
2. In the above question note that word also searches 'computerization and 'computerisations'. Now make sure that this time Word searches only for the word 'computer' in the entire document.
3. Change the entire uppercase letter to lowercase.
4. Give a heading to the above written text 'COMPUTERS IN TODAY'S WORLD'
5. Centre aligns the Heading text Computer that appears in first line.
6. Apply outside border to entire document.
7. Apply outside border to the just heading text.
8. Change page setup according to the following specifications
   Top margin: 1.5", bottom margin: 1.5"
   Gutter: 1", left margin: 1.5"
   Right margin: 1"
   Page width: 7.5", page height: 6.5 "
   Orientation: portrait
9. Give a header 'Creations' and footer 'The school of computing'. The footer should also consist of page no's.

**10.** Give appropriate commands for giving different header and footers for first page and odd & even pages.
**11.** Save and close the document.

**3.** Write the following equations in MS-Word:
$4H_3PO_3=3H_3PO_4+PH_3$, $PCL_3+CL_2=PCL_5$, $(x+y)^2=x^2+y^2+2xy$

**4.** Write the following equations in MS-Word:
$C_2H_5OH+PCL_5=C_2H_5CL+POCL_3+HCL$, $A = \pi r^2$, $a \div b \neq 0$

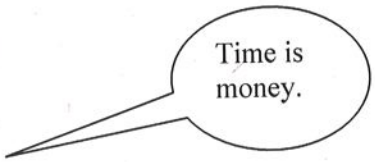
**5.** Write the following in MS-Word:
1. Preheat the oven to 220°C.
2. Copyright ©
3. Registered ®
4. Trademark ™

**6.** Create the following table in MS-Word:

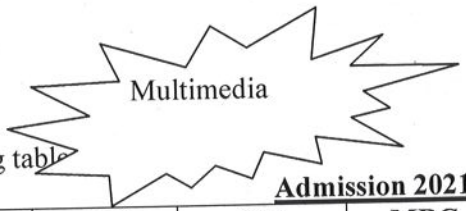
| **Name** | | Rahul | |
|---|---|---|---|
| **Roll No.** | | 101 | |
| **Subject** | **Max** | **Min** | **Obtain** |
| Java | 100 | 33 | 75 |
| Multimedia | 100 | 33 | 70 |

**7.** Create a document in MS-Word. Set the watermark as **Microsoft**. Also write the following text as formatted below:
***Measuring programming progress by lines of code is like measuring aircraft building progress by weight.***
--Bill Gates

**8.** Create the following:




**9.** Create the following:




**10.** Create the following table

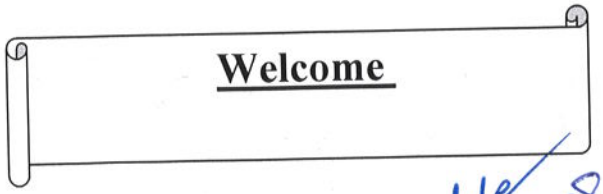
**Admission 2021-2022**

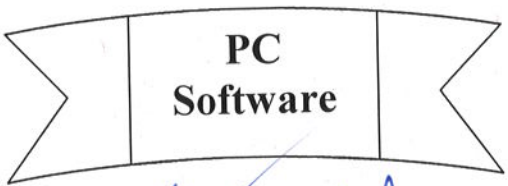
| **Course** | **OC** | **OB** | **MBC** | **SC/ST** | **Total** |
|---|---|---|---|---|---|
| Computer Science | 9 | 18 | 5 | 5 | 37 |
| Commerce | 14 | 25 | 6 | 5 | 50 |
| Mathematics | 12 | 20 | 4 | 4 | 40 |

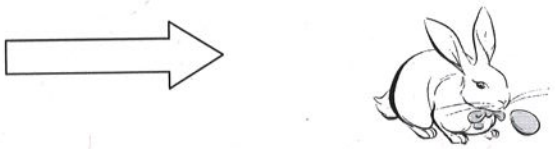
**11.** Create Table as shown

| Car | | Price |
|---|---|---|
| Maruti | Omni Van | 200000 |
| | Maruti 800 | 242000 |
| Tata | Sumo | 390000 |
| | Sierra | 447000 |

**12.** Insert the following in MS-Word.



Rabbit 

**14.** Write the following in MS-Word.

- This is sentencecase.
- this is lowercase.
- THIS IS UPPERCASE.
- This Is Capitalise Each Word.
- tHIS IS tOGGLEcASE.
-

**15.** Create the following list in MS-Word:

1. Actors
    1. Bruce Willis
    2. Gerard Butler
    3. Vin Diesel
2. Actress
    1. Julia Roberts
    2. Angelina Jolie
    3. Kate Winslet
    4. Cameron Diaz

**16.** Write the following in MS-Word:

1. Cricket Players
    3. Batsman
        1. Sachin Tendulkar
        2. Rahul Dravid
        3. Virendra Sehwag
    4. Bowler
        a. Kumble
        b. Zaheer Khan
        c. Balaji
    5. Spinner
        a) Harbhajan
        b) Kumble
        c) Kartik

**17.** Write a letter to send invitation to your friend inviting on your birthday.

**18.** Create labels for your friends' address.

**MS – EXCEL**

1. Create the following worksheet and save the worksheet as wages.xls

PACE COMPUTERS (ATC CEDT), Govt. of India
Payroll for Employee (Temporary)

Today's date :

Pay Rate :

| Worker's Name | Hired On | days Worked | Gross Wages |
|---|---|---|---|
| Kushagra | 3-Mar-07 | | |
| Pradeep | 4-Mar-07 | | |
| Puneet | 5-Mar-07 | | |
| Rajeev | 6-Mar-07 | | |

(I) Calculate days work and gross wages

**2.** Create the following worksheet and save the worksheet as wages.xls

| Name Basic (monthly) (Rs.) | HRA(% of basic) | DA (Rs.) | Total Salary (1997) | Bonus (Rs) | Total Salary (1998) | % (Increase) |
|---|---|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| Shirome5000 | 10 | 450 | | 1200 | | |
| Somya9000 | 15 | 800 | | 200 | | |
| Tanya7000 | 12 | 900 | | 1800 | | |

- Calculate the total salary as sum of Basic salary, HRA ,DA, for each employee for 1997
- Calculate total salary for year 1998 as sum of salary of 1997 and bonus
- Calculate % increase in salary from 1997 to 1998

**3.** Create a worksheet as follows

**Pace computer ( ATC CEDT ) Govt. Of India**

Payroll for employee (Permanent)

| Empcode | name | doj | salary | bonus | net salary |
|---|---|---|---|---|---|
| E001 | Meenu | 3-Mar-95 | 5000 | | |
| E002 | Manoj | 4-Mar-06 | 4000 | | |
| E003 | Preeti | 3-Mar-95 | 4800 | | |
| E004 | Sumita | 6-Mar-07 | 7500 | | |

i. allow bonus 8000 to employee having service >2 year other vise allow bonus 3000
ii. find net salary as sum of bonus and salary

**4.** create the worksheet as follows

| ***Roll No*** | Name | English | Maths | Total | Average | Division |
|---|---|---|---|---|---|---|
| ***101*** | Kushagra | 95 | 99 | | | |
| ***102*** | Ajay | 92 | 95 | | | |
| ***103*** | Vijay | 70 | 69 | | | |

| Class Average | | |
|---|---|---|

i. find Total of two subject for each student
ii. find average of two subject for each student
iii. find class as average of average column
iv. find division of student as first, second, third, assume percentage of division of your own and maximum marks in each student as 100
v. Apply conditional formatting for division column, first division should be in bold, second division should be in italic and third division should be underline

**5.** Create macro in excel to make selected cell, bold, italic outside bordered and center across select.

**6.** create bar chart with given data

| | 2001 | 2002 | 2003 |
|---|---|---|---|
| Tea | 19 | 23 | 25 |
| Coffee | 22 | 24 | 22 |
| Sugar | 45 | 40 | 45 |

(I) Provide heading production detail
(II) Provide z axis title; lacks metric tone
(III) Provide x axis title year

**7.** Create a table with column heading as shown below and using form perform data entry of records.

| Zone | Department | Employee | Salary |
|---|---|---|---|
| West | Marketing | Mukesh | 10500 |
| East | Sales | Rahul | 20000 |
| South | Marketing | Suresh | 5500 |
| North | Marketing | Anju | 25000 |
| South | Sales | Neeraj | 8000 |
| North | Sales | Ajay | 8000 |
| South | Marketing | Mahesh | 7500 |
| West | Sales | Rajesh | 4500 |

i. Sort the data according to Zone then by Department
ii. Use group and outline feature to show & hide details

**8**. Create a table with column heading as shown below and using form perform data entry of records.

| Zone | Department | Employee | Salary |
|---|---|---|---|
| West | Marketing | Mukesh | 10500 |
| East | Sales | Rahul | 20000 |
| South | Marketing | Suresh | 5500 |
| North | Marketing | Anju | 25000 |
| South | Sales | Neeraj | 8000 |
| North | Sales | Ajay | 8000 |
| South | Marketing | Mahesh | 7500 |
| West | Sales | Rajesh | 4500 |

(I) Use filter command to show records having zone: West
(II) Use filter command to show records having zone: West and salary less than 5000
(III) Use filter command to show records having salary greater than 10000

**9.** Create pivot table using Data of exercise 8

**10.** Create Table using feature

Principle 1500
Rate 4%
Time 5

| 300 | 3 | 4 | 5 |
|---|---|---|---|
| 1% | 45 | 60 | 75 |
| 2% | 90 | 120 | 150 |
| 3% | 135 | 180 | 225 |

**11.** Using goal seek feature find out the interest rate it must be to earn interest 500

Principle 1500
Rate 4%
Time 5
Interest 300

**MS PowerPoint**

Q 1 Create a PPT of Atleast 10 Slides with one slide for comparison, one slide displaying a chart with the table.
Q 2 Create a PPT presentation use rehearse timing for the slide show
Q 3 Create PPT presentation slide import sound and video clips.
Q 4 Create PPT presentation with hyperlinking.
Q 5 Create PPT presentation and apply themes and transitions.

**MS-Access**

Q.1. Create the following table in MS-Access:

| Field Name | Data Type | Description |
|---|---|---|
| ContactID | AutoNumber | Primary Key |
| ContactType | Text 50 | Type of contact (Wholesale, dealer, other) |
| Name | Text 50 | Contact's first name |
| Company | Text 50 | The Contact's employer |
| Address | Text 50 | Contact's address |
| City | Text 50 | Contact's city |
| State | Text 50 | Contact's state |
| ZipCode | Text 50 | Contact's zip code |
| Phone | Text 50 | Contact's phone |
| Fax | Text 50 | Contact's fax |
| E-Mail | Text 100 | Contact's e-mail address |
| WebSite | Text 100 | Contact's Web address |
| LastSalesDate | Date/Time | The most recent date the contact purchased something |
| DiscountPercent | Number | The customary discount provided to the customer |

| Notes | Memo | Notes and observations regarding this customer |
|---|---|---|
| Active | Yes/No | Whether the customer is still buying or selling products |

Q.2. Create the following tables in MS-Access with the refential integrity-foreign key:

**1. tblProducts**

**Primary Key - ProductID**

| ProductID | Description | Category | Quantity | Cost | RetailPrice | ProductNumber | SalePrice | Taxable |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

**2. tblSalesLineItems**

**Primary Key - SalesLineItemID**

| SalesLineItemID | InvoiceNumber | ProductID | ProductNumber | Quantity | Description | Price | Discount |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

**3. tblSales**

**Primary Key – InvoiceNumber**

| InvoiceNumber | SaleDate | InvoiceDate | Buyer | PaymentMethod | TaxLocation | TaxRate |
|---|---|---|---|---|---|---|
| | | | | | | |

**V.C. Nominee** .....

**Subject Expert** ..... (D.P.Rao)

**Subject Expert**.....

**Alumni(member)**.....

**Prof. from other Dept. of Sc. Faculty** .....

**Specialist from Industry** .....

**Departmental members**

1. **HOD- Mr. Durgesh Kumar Kotangle**.....
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# GOVT. V.Y.T. PG. AUTONOMOUS COLLEGE DURG
# DEPARTMENT OF COMPUTER SCIENCE
# SYLLABUS FOR AY 2022-23
# COURSE CODE: BIT-103 (L+P)
# SEC1- Web Designing with HTML

**Max Marks: 30(L)+ 20(P)** **Min Marks: 12+8**

**NOTE: - The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice.**

| Course Objectives | Course Outcomes |
|---|---|
| **Course Objective:**<br>To introduce the internet & web related technology & learn the intricacies of web page designing using HTML. To the Web Language, HTML & Problem Solving through the concept of object oriented programming. | **On successful completion of the course,the student will be able to:**<br>**CO1**: Discussinternet technology and concept of website.<br>**CO2**: Discussthebasic elements of HTML<br>**CO3**: Discussthe concept oflist and font tags and its attributes.<br>**CO4**: Describeimage and external & Interna; linking in HTML. |

**UNIT – I HTML BASICS & WEB SITE DESIGN PRINCIPALS:**

Concept of a web site, web standards, what is HTML?, HTML editor, explanation of the structure of the homepage, element in HTML documents, HTML tags, basic HTML tags, comments tag in HTML, viewing the source of the web page, how to download the web page source?, XHTML, CSS, Extensible Markup Language (XML), Extensible Style sheet Language (XSL), some tips for designing web pages, HTML Document Structure. HTML document structure: head section, illustration of document structure, <BASE> element, <ISINDEX> element, <LINK> element, META, <TITLE> element, <SCRIPT> element, practical applications,

**UNIT – II BODY AND SPECIAL ELEMENTS AND ATTRIBUTES:**

HTML document structure- body section:- body element and its attributes: Background; Background color; Text ; Link; Active Link(ALINK); visited link(VLINK); Left margin; top margin; organization of elements in BODY of the document; Text Block Elements; Text Emphasis Elements ; special elements- Hypertext Anchors, character level elements: character reference ,text block elements: HR(horizontal line); HN(Heading);P(Paragraph);

**UNIT – III LIST AND FONT TAGS AND ITS ATTRIBUTES:**

List address; BLOCKQUOTE; TABLE; DIV, HTML 3.2 and up; PRE(Per formatted ;FROM) Line break(BR) and image (IMG), lists, ADDRESS element BLOCKQUOTE ; element, TABLE element, COMMENTS in HTML, CHARACTER emphasis Modes, Logical & Physical style, Netscape, Microsoft and advances Standard Elements List, FONT, BASEFONT and CENTER.

**UNIT – IV IMAGE, INTERNAL AND EXTERNAL LINKING BETWEEN:**

Insertion of image using the element IMG (Attributes: SRC (Source), WIDTH, HEIGHT, ALT(alternative), ALIGN), IMG(In – Line Images) Element and Attributes; Illustrations of IMG Alignment, Image as Hypertext Anchors, Internal and External Linking between web pages hypertext anchors, HREF in anchors, Links to a particular place in a document, NAME attribute in anchor, Targeting NAME, TITLE attribute, Practical IT Application Designing web pages links with each other, Designing Frames in HTML. Practical Examples.

**TEXT BOOKS :**


1. Web Technology, A developer's Perspective, N.P. Gopalan and J. Akilandeswari, PHI publication.
2. Web Technologies : HTML, JAVASCRIPT, PHP, JAVA, JSP, ASP, NET, XML and Ajax, Black Book by Dream Tech Press.
3. Internet : The Complete Reference Millennium Edition Margaret Levine Young, Doug Muder.


**REFERENCE BOOKS:**


1. The Complete Reference : HTML and CSS, Thomas A, Powell, Mc Graw Hill.
2. Java Script The Complete Reference, Thomas Powell, Fritz Schenider, McGrawHill, Third Edition
3. Introduction To HTML, Kamlesh N.Agrawal, O.p, Vyas, P.A. Agrawal.
4. Web Technology and Design, Xavier, C, New Age International.
5. HTML, DHTML, Java Script, Perl and CGI, Ivan Bayros, BPB Publication.
6. Internet and Web Design, Ramesh Bangia, New Age International.


| | |
|---|---|
| **V.C. Nominee** ..... | **Departmental members** |
| **Subject Expert** ..... (D.P.Rao) | 1. **HOD- Mr. Durgesh Kumar Kotangle**..... |
| **Subject Expert**..... | 2. **Mr. Dileep Kumar Sahu**..... |
| **Alumni(member)**..... | 3. **Mrs. Latika Tamrakar**..... |
| **Prof. from other Dept. of Sc. Faculty** ..... | |
| **Specialist from Industry** ..... | |

# Course Structure for CBCS
# B.Sc.(IT)- - II Semester

| S.No | Course Type | Course-code | Subject | Periods | | | Credit | ESE Max Marks | Internal Marks | Practical Marks | Total Marks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | L | T | P | | | | | |
| 1. | CC-2 | BIT201(L) | Programming in C Language | 5 | 1 | | 4 | 50 | - | - | 50 |
| | | BIT 202(P) | Programming in C Language Lab | | | 3X2 | 2 | - | - | 50 | 50 |
| 3. | SEC-I | BIT203(L+P) | Programming in Java | 1 | | 1x2 | 2 | 30 | | 20 | 50 |
| TOTAL | | | | | | | | | | | 150 |

# B.Sc. (Information Technology) Second Semester
# Session 2022-2023

| Part A: Introduction | | | |
|---|---|---|---|
| Program: **B.Sc.-IT** | Class: **B.Sc.-IT-II SEMESTER** | Year: **2022** | Session:**2022-2023** |

| | | |
|---|---|---|
| 1 | Course Code | **BIT-201(L)** |
| 2 | Course Title | **Programming in C Language** |
| 3 | Course Type | **Core Course** |
| 4 | Course Objective | This course intends to provide the fundamental programming methodologies and problem-solving techniques in the C programming language. |
| 5 | Course Outcomes (CO) | **On successful completion of the course, thestudentwillbeableto**<br>**CO1:** Understand modular programming approach and learn different data types, operators and its types, operator precedence and associativity, Input-Output functions in C language.<br>**CO2:** Understand various Control Constructs and function in C language.<br>**CO3:** Understand the concepts of array , string structure, union and enum in C Language.<br>**CO4:** Describe pointers and their usage using C with its various applications.<br>**CO5:** Discuss Pre-processor file and file handling and the features of Object oriented programming. |
| 6 | **Credit Value** | **Theory: 4** |
| 7 | **Total Marks** | **Max. Marks: 50** / **Min Passing Marks: 17** |

| Unit | Topics |
|---|---|
| I | **Introduction and Programming Concepts :** Definition of Program, Source file, Object file, Executable file, Header file, Language Translator- Assembler, Interpreter, Compiler, Testing, Debugging, Linker and Loader, Algorithms, Flow Charts,History of C language, Structure of C program ,Keywords, Tokens, Data types, Constants, Literals and Variables.<br>**Operators and Expressions :** Arithmetic operators, Relational operator, Logical |

| | |
|---|---|
| | operators, Expressions, Operator : operator precedence and associativity ,Type casting, Console I/O formatting, Unformatted I/O functions: getch(), getchar, getche(), getc(), putc(), putchar(). |
| II | **Control Constructs**<br>If-else, conditional operators, switch and break, nested conditional branching statements, **Loops**: For, do..while, while, Nested loops, break and continue, goto and label, exit function.<br>**Functions**:-definition, **Function components:** Function arguments, return value, function call statement, function prototype. Type of function, Scope and lifetime of variable. Call by value and call by reference. Function using arrays, function with command line argument. User defined function: math and character functions, Recursive function. |
| III | **Array, String, Structure and Union**<br>**Array**:-Array declaration, One and Two dimensional numeric and character arrays. Multidimensional arrays.<br>**String:-**String declaration, initialization, string manipulation with/without using library function.<br>**Structure, Union & Enum- Structure**: basics, declaring structure and structure variable, typedef statement, array of structure, array within structure, Nested structure; passing structure to function, function returning structure. **Union**: basics, declaring union and union variable, **Enum**: declaring enum and enum variable. |
| IV | **Pointer**<br>Definition of pointer, pointer declaration, using **&** and *operators. Void pointer, pointer to pointer, Pointer in math expression, pointer arithmetic, pointercomparison, dynamic memory allocation, functions – malloc, calloc, realloc and free, pointers vs. Arrays, Arrays of pointer, pointer to array, pointers to functions, function returning pointer, passing function as argument to function, pointer to structure, dynamic array of structure through pointer to structure. |
| V | **File Handling and Preprocessor**<br>**File handling**: file pointer, file accessing functions: fopen(), fclose(), fputc(), fgetc(), fprintf(), fscanf(), fread(), fwrite(),feof(), fflush(), rewind(), fseek(), ferror(). File handling through command line argument. **Introduction to C preprocessor**: #include, #define, conditional compilation, **Directives:** #if, #else, #elif, #endif, #ifndef etc. |

## Part C -Learning Resources

Text Books, Reference Books, Other Resources

**Suggested Readings:**

**TEXT BOOK:**


1. Programming in C – YashwantKanetkar
2. Programming in C - Venugopal
3. The C Programming Language - Kemigham and Ritche[ Prentice Hall].
4. Application Programming in C - R. Johnson-baugh& Martin Kalin Macmillan International Editions.

Supplementary Readings:

1. The art of C Programming - Jones, Robin & Stewart, Narosa Publishing House.
2. C Problem solving and Programming - A. Kenneth, Prentice Hall International.
3. C made easy - H. Schildt, McGraw Hill Book Company


**E Resources:**

1. Introduction (from SWAYAM/NPTEL)
   https://onlinecourses.nptel.ac.in/noc19_cs38/preview
   https://onlinecourses.nptel.ac.in/noc22_cs103/preview
   https://www.youtube.com/watch?v=KG4hjVDw-p8&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=2

2. Constant and Inline Function
   https://www.youtube.com/watch?v=pX6LufLso2M&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=10

3. Pointer and Reference
   https://www.youtube.com/watch?v=GtsBZ5e1-cE&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=12

4. Function Overloading
   https://www.youtube.com/watch?v=uJGmGAShHeU&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=13

5. Operator Overloading
   https://www.youtube.com/watch?v=0jpOwe4d-FE&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=17

6. Dynamic Memory Management
   https://www.youtube.com/watch?v=lkFK2X6qIc0&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=18

**Name and Signatures**

| | |
|---|---|
| **V.C. Nominee** ..... | **Departmental members** |
| **Subject Expert** ..... (D.P.Rao) | 1. **HOD- Mr. Durgesh Kumar Kotangle**..... |
| **Subject Expert**..... | 2. **Mr. Dileep Kumar Sahu**..... |
| **Alumni(member)**..... | 3. **Mrs. Latika Tamrakar**..... |
| **Prof. from other Dept. of Sc. Faculty** ..... | |
| **Specialist from Industry** ..... | |

# GOVT. V.Y.T. PG. AUTONOMOUS COLLEGE DURG
## DEPARTMENT OF COMPUTER SCIENCE
## SYLLABUS FOR AY 2022-23
## B.Sc. (IT) – II SEMESTER
## Course Code: BIT-202(P)
## Practical LAB II: PROGRAMMING IN C LAB

| Course Objectives | CourseOutcomes |
|---|---|
| This course intended to provide in-depth programming knowledge of Problem-solving techniques and programming in C Language. | **On successful completion of the course, thestudentwillbeableto:**<br>**CO1:** Write program with all type of variables and statements of C.<br>**CO2:** Discussmodularapproachbyworkingwithfunctions<br>**CO3:** Discussprogrammingconcepts with derived data types.<br>**CO4:** Know different features file Handling and pre-processors. |

1. **Scheme of Examination:** **-Practical examination** will be two programs and a project demonstration. It will be of 3 hours duration. All programs should be with flow chart and algorithms. The distribution of practical markswill be as follows:

| | | |
|---|---|---|
| **Programme 1** | **-** | **10** |
| **Programme 2** | **-** | **10** |
| **Programme 3** | **-** | **10** |
| **Viva- Voice** | **-** | **10** |
| **[Practical Copy + Internal Record]** | **-** | **10** |
| **Total** | | **- 50** |

**2.** In every program there should be comment for each coded line or block of code.
**3.** Practical file should contain printed programs with name of author, date, path of program, unit no. and printed output.
**4.** All the following programs or a similar type of programs should be prepared.

## List of Practical

**INPUT AND OUTPUT, FORMATTING**

1. Write a program in which you declare variable of all data types supported by C language. Get input from user and print the value of each variable with alignment left, right and column width 10. For real numbers print their values with two digits right to the decimal.

**LOOPS, DECISIONS**

2. Write program to print all combination of 1 2 3.
3. Write program to generate following pattern

a)
```
* * * * *
 * * * *
  * * *
   * *
    *
```

c)
```
    *
   * *
  * * *
 * * * *
* * * * *
```

b)
```
1
2 3
4 5 6
7 8 9 10
```

d)
```
    1
  2 1 2
3 2 1 2 3
4 3 2 1 2 3 4
```

4. Write main function using switch…case, if..else and loops which when called asks pattern type; if user enters 11 then first pattern is generated using for loop. If user enters 12 then first pattern is generated using while loop. If user enters 13 then first pattern is generated using do-while loop. If user enters 21 then a second pattern is generated using for loop and so on.
5. Write program to display number 1 to 10 in octal, decimal and hexadecimal system.
6. Write program to display number from one number system to another number system. The program must ask for the number system in which you will input integer value then the program must ask the number system in which you will want output of the input number after that you have to input the number in specified number system and program will give the output according to number system for output you mentioned.
7. Write a program to perform following tasks using switch…case, loops, and conditional operator (as and when necessary).

   a) Find factorial of a number

   b) Print Fibonacci series up to n terms and its sum.

   c) Print sin series up to n terms and its sum.

   d) Print exponential series up to n terms and its sum.

   e) Print prime numbers up n terms.

   f) Print whether a given year is leap or not.

8. Write program no. 6 but use library function to perform above tasks.

**ARRAY**

9. Create a single program to perform following tasks using switch, if..else, loop and single dimension character array without using library function:

   a) To reverse the string.
   b) To count the number of characters in string.
   c) To copy the one string to other string;
   d) To find whether a given string is palindrome or not.
   e) To count no. of vowels, consonants in each word of a sentence and no. of punctuation in sentence.
   f) To arrange the alphabets of a string in ascending order.

10. Create a single program to perform following tasks using switch, if..else, loop and single dimension integer array:

    a) Sort the elements.

    c) Search for presence of particular value in array element using linear search.

    d) Search for presence of particular value in array element using binary search.

**FUNCTIONS**

11. Write program using the function power (a, b) to calculate the value of a raised to b.
12. Write program to demonstrate difference between static and auto variable.
13. Write program to demonstrate difference between local and global variable.
14. Write a program to perform following tasks using switch…case, loops and function.
    a) Find factorial of a number
    b) Print Fibonacci series up to n terms and its sum.
    c) Print Sin series up to n terms and its sum.
    d) Print exponential series up to n terms and its sum.
15. Write a program to perform following tasks using switch…case, loops and **recursive** function.
    a) Find factorial of a number
    b) Print Fibonacci series up to n terms and its sum.
    c) Print Sin series up to n terms and its sum.
    d) Print exponential series up to n terms and its sum.
    e) Print natural series up to n terms and its sum
16. Write a function to accept 10 characters and display whether each input character is digit, uppercase letter or lower case letter.

## Array & Function

17. Create a single program to perform following tasks using switch, if..else, loop, function and double dimension integer array of size 3x3:
    a) Addition of two matrix.
    b) Subtraction of two matrix.
    c) Multiplication of two matrix.
    d) Inverse of matrix.
    e) Transpose of matrix.
18. Create a single program to perform following tasks using switch, if..else, loop, user defined function and single dimension character array:
    a) To reverse the string.
    b) To count the number of characters in string.
    c) To copy the one string to other string;
    d) To find whether a given string is palindrome or not.
    e) To count no. of vowels, consonant in each word of a sentence and no, of punctuations in sentence.
19. Create a single program to perform following tasks using switch, if..else, loop, function and single dimension integer array:
    a) Sort the elements.
    b) Find largest element and smallest element.
    c) Search for presence of particular value in array element using linear search.
    d) Search for presence of particular value in array element using binary search.

### STRUCTURE & UNION

20. Create a structure Student having data members to store roll number, name of student, name of three subjects, max marks, min marks, obtained marks. Declare a structure variable of student. Provide facilities to input data in data members and display result of student.

21. Create a structure Date with data member's dd, mm, yy (to store date). Create another structure Employee with data members to hold name of employee, employee id and date of joining (date of joining will be hold by variable of structure Date which appears as data member in Employee Structure). Store data of an employee and print the same.

**POINTER**

22. Define union Emp having data members:-one integer, one float and one single dimension character array. Declare a union variable in main and test the union variable.
23. Define an enumDays_of_Week members of which will be days of week. Declare an enum variable in main and test it.
24. Write a program of swapping two numbers and demonstrates call by value and call by reference.
25. Write program to sort strings using pointer exchange.
26. Write a program in c using pointer and function to receive a string and a character as argument and return the no. of occurrences of this character in the string.
27. Write program to demonstrate pointer arithmetic.

**FILE STREAMS**

28. Write program to copy content of one file to other file removing extra space between words name of files should come from command line arguments.
29. Write program to create a file 'data' containing a series of integers and count all even numbers present in the file 'data'.
30. Write a program to count no. of tabs, new lines, character and space of a file.
31. Write a program to read item number, rate and quantity from an inventory file and print the followings:
    1. Items having quantity > 5.
    2. Total cost of inventory.

# GOVT. V.Y.T. P.G. AUTONOMOUS COLLEGE, DURG (C.G.)
## DEPARTMENT OF COMPUTER SCIENCE
## SYLLABUS FOR AY 2022-23
## B.Sc. (IT) – II SEMESTER
## COURSE CODE: BIT-203(L+P)
# Programming in JAVA

**Max Mark: 80** **Min Marks: 27**

**Note: The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice. Only Simple calculators allowed not scientific calculator.**

| Course Objectives | Course Outcomes |
|---|---|
| The OOPs with JAVA course aim to introduce theconcept of object-oriented programming, and willbe able to implement the various features ofOOPs. He /she will efficiently write programs to solve real world problems using Java The subject will build the foundation for implementing ObjectOriented concept for problem solving | On successful completion of the course, the student will be able to:<br>**CO1:** Implement, compile, test and run java programs.<br>**CO2:** Know the concept of classes and objects from a problem.<br>**CO3:** Learn the concepts of arrays, vectors, interfaces and packages.<br>**CO4:** Handle multithreading concepts by creating threads within a java program.<br>**CO5:** Embed java program in web browser using java applets. |

**UNIT I**

C++ vs JAVA, JAVA, Internet, and WWW, JAVA support systems, JAVA environment. JAVA program structure, To kens, Statements, JAVA virtual machine, Constant & Variables, Data Types, Declaration of Variables, Scope of Variables, Symbolic Constants, Type Casting. Operators: Arithmetic, Relational, Logical Assignments, Increment and Decrement, Conditional, Bitwise, Special, Expressions & its operator, Loops While, Do, For, Jumps in Loops, Labelled Loops.

**UNIT II**

Defining a Class, Adding Variables and Methods, Creating Objects, Accessing Class Members, Constructors, Methods Overloading, Static Members, Nesting of Methods. Inheritance: Extending a Class, Overriding Methods, Final Variables and Methods, Final Classes, Finalize Methods, Abstract methods and Classes, Visibility Control .

**UNIT III**

Arrays: One Dimensional & two Dimensional, strings, Vectors, wrapper Classes, Defining Interface Extending Interface, Implementing Interface, Accessing Interface Variable, System Packages, Using System Package, Adding a Class to a Packages, Hiding Classes.

**UNIT IV:**

Creating Threads, Extending the Threads Class, Stopping and Blocking a Thread, Life Cycle of a Thread, Using Thread Methods, Thread Exceptions, Thread Priority, Synchronization, Implementing the Runnable Interface.

**UNIT V:**

Local and Remote Applets Vs Applications, Writing Applets, Applets Life Cycle, Creating Executable Applet, Designing a Web Page, Applet Tag, Adding Applet to HTML File, Running the Applet, Passing Parameters to Applets, Aligning the Display, HTML Tags & Applets, Getting Input from the User.

**Text Books:**

**S. No. Title Authors Publisher**

1) Programming with JAVA E. Balagurusamy TMH
2) Java The complete reference Herbert Schildt TMH

**Reference Books:**

**S. No. Title Authors Publisher**

1) Object Oriented Systems with Java TanweerAlam Khanna Publishing House
2) Core Java TanweerAlam Khanna Publishing House

## DIRECTIVES FOR STUDENTS, FACULTY AND EXAMINERS

1. There shall be three sections (Section A, B, and C ) in each theory paper.
2. Section A shall contain very short answer type questions (One or two line answer) or objective type questions (fill in the blank). **(not multiple choice questions)**
3. Section B shall contain short answer type questions with the limit of 150 words
4. Section C shall contain long answer/ descriptive type questions. The students are required to answer precisely and the answer should not exceed the limit of 350 words.
5. The students are required to study the content mentioned in the curriculum exhaustively.

**EVALUATION PATTERN**

- **Theory 50 marks**
- **Practical 50 marks**

| Question Type | Max Marks 50 (Marks X No. of Q.) |
|---|---|
| A (Very short Ans.) | 1X10 = 10 |
| B (Short Ans.) | 3X5 = 15 |
| C (Long Ans.) | 5X5 = 25 |
| | |

**Name and Signatures**

| | |
|---|---|
| **V.C. Nominee** ..... <br> **Subject Expert** ..... <br> **Subject Expert**..... <br> **Alumni(member)**..... <br> **Prof. from other Dept. of Sc. Faculty** ..... <br> **Specialist from Industry** ..... | **Departmental members** <br> 1. **HOD- Mr. Durgesh Kumar Kotangle**..... <br> 2. **Mr. Dileep Kumar Sahu**..... <br> 3. **Mrs. LatikaTamrakar**..... |

## Corrigendum for UG Classes

1. **Section –A (very short answer question)**
   There shall be 8/9/10 objective type questions (No multiple choice). All questions are compulsory; at least one from each unit.

2. **Section B, Section C**
   There shall be 10 questions, two questions from each unit.
   The candidate has to attempt one question from each unit.

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