GOVT. D.B. GIRLS' P.G. (AUTONOMOUS) COLLEGE

RAIPUR CHHATTISGARH

SYLLABUS

OF

B.Sc. Computer Science Part-II

2020-21

Theory

Part A

No.	Title	Marks		Total
		Max.	Min.	
Paper-I	Computer Hardware	50	17	50
Paper-II	Computer Software	50	17	50

Practical

Part B

	Name of The Practical	Marks	
		Max.	Min.
Practical-I	Computer Software(Programming in C++ & HTML)	50	17

APPROVED BY THE BOARD OF STUDIES ON

NAME	IN THE CAPACITY OF	SIGNATURE
Dr. MADHU SHRIVASTAVA	CHAIRMAN	
Dr. SANJAY KUMAR	SUBJECT EXPERT (University Nominee)	
Shri . RAJU KHUNTTEY	SUBJECT EXPERT (Principal Nominee)	
Mrs. RASHMI SENGUPTA	MEMBER OF THE DEPARTMENT	
Mrs. KIRAN DEWANGAN	MEMBER OF THE DEPARTMENT	
Ku. SANDHYA SAHU	EX-STUDENT	

DEPARTMENT OF COMPUTER SCIENCE
B.Sc. PART – II
COMPUTER SCIENCE
SESSION :2020-21
PAPER - I
COMPUTER HARDWARE

Maximum Marks: 50   **Number of Units : V**
Minimum Marks: 17

UNIT 1

CLASSIFICATION AND ORGANIZATION OF COMPUTERS
DIGITAL AND ANALOG COMPUTERS AND ITS EVOLUTION. MAJOR COMPONENTS OF DIGITAL COMPUTERS; MEMORY ADDRESSING CAPABILITY OF CPU; WORD LENGTH AND PROCESSING SPEED OF COMPUTERS; MICROPROCESSORS SINGLE CHIP MICROCOMPUTERS; LARGE AND SMALL COMPUTERS. USERS INTERFACE HARDWARE, SOFTWARE AND FIRMWARE. MULTIPROGRAMMING, MULTIUSER SYSTEM. DUMB SMART AND INTELLIGENT TERMINALS COMPUTER NETWORK AND MULTI PROCESSING, LAN PARALLEL PROCESSING, FLINN"S CLASSIFICATION OF COMPUTERS. CONTROL FLOW AND DATA FLOW COMPUTERS.

UNIT 2

CENTRAL PROCESSING UNIT
CPU ORGANIZATION, ALU, CONTROL UNIT, REGISTERS. INSTRUCTIONS OF INTEL 8085, INSTRUCTION WORD SIZE, VARIOUS ADDRESSING MODE INTERRUPTS AND EXCEPTIONS, SOME SPECIAL CONTROL SIGNALS AND I/O DEVICES, INSTRUCTION CYCLES, FETCH AND EXECUTION OPERATION, TIME DIAGRAM, DATA FLOW.

UNIT 3

MEMORY OF COMPUTERS
MAIN MEMORY, SECONDARY MEMORY, BACK UP MEMORY, CACHE MEMORY, REAL AND VIRTUAL MEMORY, SEMICONDUCTOR MEMORY, MEMORY CONTROLLER AND MAGNETIC MEMORY, RAM DISKS, OPTICAL DISKS, MAGNETIC BUBBLE MEMORY, DASD, DESTRUCTIVE AND NONDESTRUCTIVE READOUT ,PROGRAM OF DATA MEMORY AND MMU.

UNIT 4
I/O DEVICES
I/O DEVICES OF MICROCONTROLLER; PROCESSORS, I/O DEVICES, PRINTER ,PLOTTERS, OTHER OUTPUT DEVICES; I/O PORT, SERIAL DATA TRANSFER SCHEME, MICRO CONTROLLER, SIGNAL PROCESSORS, I/O PROCESSOR, ARITHEMETIC PROCESSORS.

UNIT 5
SYSTEM SOFTWARE AND PROGRAMMING TECHNIQUE

ML, AL, HLL, STAC SUBROUTINE ,DEBUGGING OF PROGRAMS, MACRO MICRO
PROGRAMMING, PROGRAM DESIGN, SOFTWARE DEVELOPMENT, FLOW &
CHART MULTI PROGRAMMING, MULTIUSER, MULTITASKING PROTECTION,
OPERATING SYSTEM AND UTILITY PROGRAM, APPLICATION PACKAGES.

RECOMMENDED BOOKS

1. COMPUTER FUNDAMENTALS: ARCHITECTURE AND ORGANIZATION- BY
   B. RAM
2. COMPUTER TODAY   - BY DONALD H.
   SANDERS
3. COMPUTERS FUNDAMENTAL   - BY RAJARAMAN
4. IBM PC-XT CLONES   - BY GOVINDA
   RAJALU

DEPARTMENT OF COMPUTER SCIENCE
B.Sc. PART – II
COMPUTER SCIENCE
SESSION : 2020-21
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COMPUTER SOFTWARE

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 Minimum Marks: 17

UNIT 1
HTML BASICS & WEBSITE DESIGN PRINCIPLES
CONCEPT OF WEBSITE, WEB STANDARDS, WHAT IS HTML? HTML VERSIONS, NAMING SCHEME FOR HTML DOCUMENTS, HTML DOCUMENT /FILE, HTML EDITOR, EXPLANATION OF THE STRUCTURE OF THE HOME PAGE, ELEMENTS IN THE HTML DOCUMENTS, HTML TAGS, BASIC HTML TAGS, COMMENT TAG IN HTML, VIEWING THE SOURCE OF A WEBPAGE, HOW TO DOWNLOAD THE WEB PAGE SOURCE? XHTML, CSS, EXTENSIBLE MARKUP LANGUAGE (XML) EXTENSIBLE STYLE SHEET LANGUAGE (XSL), SOME TIPS OF DESIGNING WEBPAGES, 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, HTML DOCUMENT STRUCTURES- BODY SECTION:- BODY ELEMENTS AND ITS ATTRIBUTES: BACK GROUND: BACK GROUND COLOR; TEXT: LINK; ACTIVE LINK (ALINK); VISITED LINK (VLINK); LEFT MARGIN; TOP MARGIN, ORGANIZATION OF ELEMENTS IN THE BODY OF THE DOCUMENT; TEXT BLOCK ELEMENTS; TEXT EMPHASIS ELEMENTS; SPECIAL ELEMENTS- HYPER TEXT ANCHORS, CHARACTER- LEVEL ELEMENTS; CHARACTER REFERENCES, TEXT BLOCK ELEMENTS; HR (HORIZONTAL LINE); HN (HEADINGS); P (PARAGRAPH); LISTS; ADDRESS: BLOCKQUOTE; TABLE; DIV(HTML 3.2 AND UP); PRE (PREFORMATTED; FORM, TEXT EMPHASIS ELEMENTS, SPECIAL; ELEMENTS- HYPERTEXT ANCHORS, CHARACTER- LEVEL ELEMENTS; LINE BREAKS (BRA) AND IMAGES (IMG), LISTS, ADDRESS ELEMENT, BLOCKQUOTE ELEMENTS, TABLE ELEMENTS, COMMENTS IN HTML, CHARACTER EMPHASIS MODES, LOGICAL AND PHYSICAL STYLES, NET SCAPE, MICROSOFT AND ADVANCED STANDARD ELEMENTS LIST, FONT, BASEFONT, AND CENTER.

UNIT 2
IMAGE, INTERNAL AND EXTERNAL LINKING BETWEEN WEBPAGES
NETSCAPE, MICROSOFT AND ADVANCED STANDARD ELEMENTS LIST, FONT ,BASEFONT AND CENTER ,INSERTION OF IMAGES USING THE ELEMENT IMG (ATTRIBUTES; SRC (SOURCE), WIDTH, HEIGTH, ALT (ALTERNATIVE), ALLIGN, IMAGE (IN LINE IMAGES), ELEMENT AND ATTRIBUTES, ILLUSTRATION OF IMG ALIGNMENT, IMAGES AS HYPER TEXT ANCHORS,INTERNAL & EXTERNAL LINKING BETWEEN WEB PAGES HYPER TEXT ANCHOR, HREF IN ANCHORS, LINKS TO A PARTICULAR PLACE IN A DOCUMENT, NAME ATTRIBUTE IN AN

ANCHOR, TARGETING NAME ANCHORS, TITLE ATTRIBUTE, PRACTICAL IT APPLICATION DESIGNING WEB PAGES LINKS WITH EACH OTHER, DESIGNING FRAMES IN HTML. PRACTICAL EXAMPLES.

UNIT 3

INTRODUCTION TO OOP

ADVANTAGES OF OOP, THE OBJECT ORIENTED APPROACH, CHARACTERISTICS OF OBJECT ORIENTED LANGUAGES- OBJECT, CLASSES, INHERITANCE, REUSABILITY, POLYMORPHISM AND C++. FUNCTION: FUNCTION DECLARATION, CALLING FUNCTION, FUNCTION DEFINES, PASSING ARGUMENTS TO FUNCTION, PASSING CONSTANT, PASSING VALUE, REFERENCE ARGUMENT, RETURNING BY REFERENCE, INLINE FUNCTION, FUNCTION OVERLOADING, DEFAULT ARGUMENTS IN FUNCTION.

UNIT 4

OBJECT CLASSES AND INHERITANCE

OBJECT AND CLASS, USING THE CLASS, CLASS CONSTRUCTOR, CLASS DESTRUCTORS, OBJECT AS FUNCTION ARGUMENT, COPY CONSTRUCTOR, STRUCT AND CLASSES, ARRAY AS CLASS MEMBER, STATIC CLASS DATA, STATIC MEMBER FUNCTIONS, FRIEND FUNCTION, FRIEND CLASS, OPERATOR OVERLOADING, TYPE OF INHERITANCE, BASE CLASS, DERIVE CLASS, ACCESS SPECIFIER PROTECTED, FUNCTION OVERLOADING, MEMBER FUNCTION, STRING, TEMPLATE FUNCTION.

UNIT 5

POINTERS AND VIRTUAL FUNCTION

POINTERS: & AND * OPERATOR POINTER VARIABLES, POINTER TO POINTER, VOID POINTER , POINTER AND ARRAY, POINTER AND FUNCTION, POINTER AND STRING, MEMORY MANAGEMENT, NEW AND DELETE, POINTER TO OBJECT, THIS POINTER VIRTUAL FUNCTION: VIRTUAL FUNCTION, VIRTUAL MEMBER FUNCTION, ACCESSES WITH POINTER, PURE VIRTUAL FUNCTION. FILE AND STREAM: C++ STREAMS, C++ MANIPULATORS, STREAM CLASS, STRING I/O ,CHAR I/O, OBJECT I/O, I/O WITH MULTIPLE OBJECT, DISK I/O.

RECOMMENED BOOKS:

1. INTRODUCTION TO HTML   : KAMLESH AGRAWAL, O.P.VYAS, PRATEEK

                                              A.AGRAWAL(KITAB MAHAL
                        PUBLICATION)
2. LET US C++   :Y. KANETKAR B.P.B
PUBLICATION
3. PROGRAMMING IN C++   : E. BALAGURUSWAMI
4. MASTERING INC++   : VENU GOPAL
5. OBJECT ORIENTED PROGRAMMING IN C++ : LAFORE R, GALGOTIA
PUBLICATIONS

PRACTICAL

Based on Paper - II

Ordinance – As per Pt Ravishankar Shukla University Ordinance.

B.Sc. PART-II COMPUTER SCIENCE
SESSION **2020-21**
COMPUTER SCIENCE
PRACTICAL-I
COMPUTER SOFTWARE

Maximum Marks: 50   Minimum Marks: 17

Distribution of Marks

Sessional	-	**10**
Practical	-	**30**
Viva	-	**10**

List of Practicals: C++

Q1. Write a program to enter any two numbers and find

   i) Greater Number
   ii) Smallest Number .

Q2. Write a program to enter any three numbers and find
   i) Greater Number
   ii) Smallest Number .

Q3. Write a Program to display marks of 3 subjects, Total marks and Percentage.

Q4. Write a program to print table of any number.

Q5. Write a program to find factorial of any number
   i) using for loop
   ii) using while loop
   iii) using do-while loop.

Q6. Write a Program to print

a.	1	b.	1	c.	* * * *
	2 2		1 2		* * *
	3 3 3		1 2 3		* *
	4 4 4 4		1 2 3 4		*

Q7. Write a Program to swap two numbers using
   i) Call by Value
   ii) Call by Reference.

Q8. Write a Program to add two matrices.

Q 9. Write a program to multiply the two matrices.

Q10. Write a program to print diagonal elements of matrices.

Q11. Write a Program to compare two strings.

Q12. Write a Program to copy one string to another.

Q13. Write a Program to convert temperature from Fahrenheit to Celsius using member function.

Q14. Write a program to compare two number using friend function.

Q15. Write a program to illustrate the use of friend class.

Q16. Write a Program for implementation of copy constructor.

Q17. Write a Program to calculate area of circle, rectangle, triangle using function overloading concept.

Q18. Write a Program to overload '+' operator so will have addition value of two complex numbers.

Q19. Write a program to join the different strings by using the logical AND(&&) operator and operator overloading.

Q20. Write a program to explain single inheritance
　　 i) when visibility => public
　　 ii) when visibility => private.

Q21. Write a program to explain hybrid inheritance.

Q22. Write a program to explain multiple inheritance .

Q23. Write a program to explain multilevel inheritance.

Q24. Write a program to illustrate the virtual base class.

Q25. Write a template to add two numbers.

Q26. Write a program to this pointer.

Q27. Write a program to illustrate the virtual functions.

HTML

Q1. Write a program to create biodata.

Q2. Write a program for linking.

Q3. Write a program to display image.

Q4.　Write HTML code for following output (Table):

Govt. D.B. Girl's P.G. College Raipur (C.G.)		
Roll No.	Name	Percentage
1001	Pooja	62
1002	Varsha	74
1003	Neelam	65

Q5. Write an HTML document to print the following.
1. City
   - Raipur
   - Bilaspur
   - Bhilai

2. Educational
   - Mathematics
     (i)　Part I: Geometry
     (ii)　Part II: Calculus
     (iii)　Part III: Analysis

Q6. Write the HTML code for following format:-

"Employee Details of Steel company"

	Emp_code	**Designation**	**Salary**	**Address**
Anil	**A101**	**MD**	**18000**	**Raipur**
Pooja	**P169**	**AGM**	**8000**	**Durg**
Lalit	**L236**	**GM**	**14500**	**Raipur**
Rashmi	**R110**	**Peon**	**3500**	**Bastar**

Q.7. Write the HTML code for following biodata form :

<u>BIODATA</u>

First name:

Last name:

Male
Female
I have bike
I have car

Your occupation   IT

Reset   Submit Query

Q8. Write a HTML program for the following output.

JM Software House
1. Software Development
   • Company Information
   • The Platform of the software Development
   • Hardware specification
   • Customized Development
   • Client List
2. Marketing
   o Complete Information of the Product
   o Online sale of the Product
   o Product Updates
3. Customer Support

   ▪ Encourage customer to give menaingful feedback
   ▪ Customer support
   ▪ Search Engines
   ▪ Contact Address and Company Address

Q9. Write the HTML code for following output:-

• *Computer*
   o *Hardware part*
   o *Software part*

• *College*
   o *Teacher Information*
   o *Student Information*

Q10. Write the HTML code for following output:-

Wonder Why I Ponder

Sometimes I sit back and wonder
Why the sky's so big and blue,
Why it not red or purple
 I simply have no clue

Sometimes I sit back and wonder,
Why babies cry so much,
May be they see the devil,
I only have a hunch.

Q11. Write an HTML document to print the following. The family has the following facilities.
1. Own house
    - 2400 square feet living area
    - Separate bungalow
    - Car shed available
2. Car
    - Maruti Omni Van
    - Registration number TN 728195
    - 1994 Model

Q12. Write HTML design code for the following frame **:-**

P G D C A (frame 1)	1. Computer hardware Software 2. MBA Marketing Finance (frame 2)
	This frame block will be blank **(frame 3)**
	Here display any image (frame 4)

Q13. Create the following table using HTML.
 Admission 2009-10

Course	OC	BC	MBC	SC/ST	Total

Computer Science	9	18	5	5	37
Commerce	14	25	6	5	50
Mathematics	12	20	4	4	40
Physics	11	5	19	5	40
Chemistry	10	10	5	15	40

Q14. Create the following table using HTML.

Car		Price
Maruti	Omni van	200000
	Maruti 800	242000
Tata	Sumo	390000
	Sierra	447000
Ambassador	Patrol	324000
	Diesel	387000

Q15. Write HTML coding for the display of the following.

Name		Neha Verma	
Roll No.		1000 I	
Subject	Max	Min	Obtain
Maths	100	33	75
Java	100	33	70
C	100	33	76
VB	100	33	78

Q16. Create following form using HTML.

Name   :

Father Name   :

Age   :

College   :

City   Raipur ▼

Sex   ◯ Male   ◯ Female