Savitribai Phule Pune University

Pune -7

Course Name : B.Sc. Animation

Class : F.Y.

Revised syllabus to be implemented from Academic year 2015-2016

F.Y. B.Sc. Animation	
Theory Papers	
Paper ID	**Paper Name**
AN-1101	Introduction to Elements of Information Technology
AN-1102	Introduction to Programming Languages
AN-1103	Basics of Animation
AN-1104	Foundation Art
AN-1105	Computer Based 2D Animation
AN-1106	Introduction to Graphics
AN-1107	Elements of 3D Design
AN-1108	Introduction to Mass Communication and Media Literacy
Practical Papers	
AN-1109	Introduction to Programming languages
AN-1110	Foundation Art & Basics of Animation
AN-1111	Introduction to Graphics + Computer Based 2D Animation
AN-1112	Elements of 3D Design
S.Y. B.Sc. Animation	
Theory Papers	
Semester I	
Paper ID	**Paper Name**
AN-2101	Value Education
AN-2102	3D Production (Using Software Maya)
AN-2103	Graphics Art (Using Software Adobe Indesign)
AN-2104	Multimedia Systems
AN-2105	Animation Techniques – I
AN-2106	Production Process – I
Semester II	
Paper ID	**Paper Name**
AN-2201	Value Education (Skill Development, Personality Development, Mind Mapping)
AN-2202	3D Production (Using Software Mudbox)
AN-2203	Introduction to Action Script (Using Software Adobe Flash)
AN-2204	Multimedia Communication
AN-2205	Animation Techniques – II
AN-2206	Production Process – II

Practical Papers	
Paper ID	**Paper Name**
AN-2207	3D Production I & II
AN-2208	- Graphics Art - Introduction to Action Script
AN-2209	- Animation Techniques I & II - Production Process I & II
T.Y. B.Sc. Animation	
Theory Papers	
Semester I	
Paper ID	**Paper Name**
AN-3101	Script Writing
AN-3102	Web Technology
AN-3103	Game Design
AN-3104	Digital Editing
AN-3105	VFX – I
AN-3106	Creative Thinking
Semester II	
Paper ID	**Paper Name**
AN-3201	IPR and Cyber Security
AN-3202	User Interface (UI) Design
AN-3203	Game Production
AN-3204	Motion Graphics
AN-3205	VFX – II
AN-3206	New Media
Practical Papers	
Paper ID	**Paper Name**
AN-3207	- Web Design - User Interface (UI) design
AN-3208	- Motion Graphics - VFX II
AN-3209	100 marks project including- - Showreel - Protfolio or Game Design

Detailed Syllabus F.Y. B.Sc. (Animation)

AN- 1101 , Paper I : Introduction to Elements of Information Technology		
Chapter No.	**Topic Name**	**Number of Lectures**
1	**Introduction** 1.1 Characteristics of computer 1.2 Evolution of computer 1.3 Computer generations	**6**

2	**Basic Computer organization** 2.1 Input unit 2.2 Output unit 2.3 Storage unit 2.4 ALU,CU,CPU 2.5 The system Concept	**5**
3	**Number Systems** 3.1 What is decimal , Binary, Octal , Hexadecimal number system 3.2 Converting from one number system to another	**8**
4	**Processor and Memory** 4.1 Detail Central processing Unit 4.2 Detail study of Main Memory	**6**
5	**Secondary Storage Devices** 5.1 Sequential and Direct-Access Devices 5.2 Magnetic Disks 5.3 Optical Disks 5.4 Memory storage Devices	**8**
6	**Input-Output Devices** 6.1 What is input and output device 6.2 Keyboard 6.3 Point-and-Draw Device 6.4 Monitors 6.5 VDU 6.6 Plotters 6.7 Printer and types of printer	**8**
7	**Computer Program** 7.1 What is Algorithm? 7.2 Sample Algorithms 7.3 Representation of algorithm 7.4 What is Flow chart? 7.5 Why to use flow charts 7.6 Flowchart symbols 7.7 Levels of flowchart 7.8 Flowcharting rules 7.9 Advantages and disadvantages of flowcharts	**10**
8	**Computer Languages** 8.1 Machine language 8.2 Assembly language 8.3 High-level language	**6**
9	**Operating Systems** 9.1 What is operating system? 9.2 Main functions of Operating systems 9.3 What is process 9.4 Process management in early systems 9.5 Memory management 9.6 File management 9.7 Device management 9.8 Security	**9**

10	**Data Communication and Computer Networks** 10.1 Basic Elements of Communication 10.2 Data Transmission Mode 10.3 Data Transmission Media 10.4 Digital and Analog data transmission 10.5 Data transmission services 10.6 Multiplexing Techniques 10.7 Asynchronous and synchronous transmission 10.8 Switching techniques 10.9 Routing 10.10 Network topology 10.11 Network Types 10.12 Communication protocol 10.13 Internetworking Tools 10.14 Wireless Networks 10.15 Distributed Computing system	**16**
11	**The Internet** 11.1 Definition 11.2 Brief History 11.3 Electronic mail 11.4 FTP 11.5 Telnet 11.6 WWW 11.7 Internet search engines 11.8 Uses of the internet	**8**
12	**Classification of Computers** 12.1 Notebook Computer 12.2 Personal Computers 12.3 Mainframe system 12.4 Supercomputer 12.5 Client and server computers 12.6 Handheld Computer	**8**

Reference Books:-

1. Computer Fundaments By Pradeep K. Sinha & Priti sinha , sixth Edition (BPB Publication)
2. Fundamentals of Computers by V. Rajaraman

AN- 1102 , Paper II : Introduction to Programming Languages		
Chapter No.	**Topic Name**	**Number of Lectures**
1	**Introduction to C** 1.1 History 1.2 Structure of a C program 1.3 Functions as building blocks 1.4 Keywords 1.5 Identifiers	**8**

	1.6 Variables 1.7 Constants character, integer, oat, string, escape sequences 1.8 Data types:-built-in and user defined 1.9 Operators and Expressions: Operator types (arithmetic, relational, logical, assignment, bitwise, conditional, other operators), 1.10 Precedence and associatively rules. 1.11 Simple programming	
2	**Control Structures** 2.1 Decision making structures: If, if-else, switch 2.2 Loop Control structures: While, do-while, for 2.3 Nested structures 2.4 break and continue	**14**
3	**Functions in C** 3.1 Array declaration, initialization 3.2 Types one, two and multidimensional 3.3 Passing arrays to functions 3.4 What is pointer? 3.5 Use of pointer. 3.6 Implementation of pointer 3.7 What is structure? 3.8 What is use of structures? 3.9 Creating structure	**8**
4	**Arrays, pointers and structures** 4.1 Array declaration, initialization 4.2 Types one, two and multidimensional 4.3 Passing arrays to functions 4.4 What is pointer? 4.5 Use of pointer. 4.6 Implementation of pointer 4.7 What is structure? 4.8 What is use of structures? 4.9 Creating structure	**10**
5	**Introduction OOP** 5.1 What is OOP 5.2 Major and Minor pillars of OOP 5.3 Concept, Benefits and Application of OOP 5.4 Structure of C++ Programming 5.5 Tokens, expressions and control structures, keywords, 5.6 Identifiers, data types & operators in C++.	**8**
6	**Functions in C++** 6.1 Function Prototyping 6.2 The Main Function 6.3 Call by value, Call by reference 6.4 Return by reference 6.5 Inline Functions 6.6 Default arguments 6.7 Const Argument 6.8 Function overloading 6.9 Friend and Virtual functions	**13**

	6.10 Math Library Functions	
7	**Class and Objects** 7.1 Introduction to classes and creating objects 7.2 Defining Member Function 7.3 A C++ Program with Class 7.4 Nesting Member Function 7.5 Private Member function 7.6 Array with class 7.7 Memory allocation for objects 7.8 Static data member 7.9 Static member function 7.10 Array to objects 7.11 Objects as function arguments 7.12 Friendly function 7.13 Returning object 7.14 Constructor 7.15 All different type of constructor 7.16 destructors	**15**
8	**Inheritance, Virtual functions and Polymorphism** 8.1 Single, Multilevel, Multiple, Hierarchical and Hybrid Inheritance 8.2 Virtual base classes**(Only theoretical concept no implementation)** 8.3 Abstract classes**(Only theoretical concept no implementation)** 8.4 What is polymorphism?	**10**
9	**Templates and Exception handling** 9.1 Generic functions 9.2 Templates, class Templates, functions Templates, Member function templates, template arguments 9.3 Exception handling function templates, template arguments, Exception handling fundamentals, exception handling options **(Only theoretical concept no implementation)** 9.4 Catching all exceptions, restricting exceptions and throwing exceptions **(Only theoretical concept no implementation).**	**10**
Reference books: 1. Object Oriented Programming with C++ - E. BALAGURUSWAMY 2. Let us C By Yashwant Kanitkar		

AN- 1103 , Paper III : Basics of Animation		
Chapter No.	**Topic Name**	**Number of Lectures**
1	**History of Animation** 1.1. The Art of Walt Disney 1.2. The Encyclopedia of Animation	**2**
2	**Introduction to Animation** 2.1. Animation for Storytelling 2.2. Origins of Story	**3**
3	**Terms used in Animation**	**3**

	3.1. Production Cycle 3.2. Dope Sheet	
4	**Types of Animation** 4.1 Cel Animation 4.2 Web Animation	**4**
5	**Skills for Animation Artist** 5.1. Making Model Puppets 5.2. Animating Objects	**8**
6	**Basic Principles of Animation** 6.1. Explain the Basic Principles 6.2. Explain with Acting	**4**
7	**Animator's Drawing Tools** 7.1. Image Capture 7.2. Collage	**6**
8	**Rapid Sketching & Drawing** 1.1. Basic Sketching 1.2. Develop Drawing Skill	**8**
9	**Developing Animation Character** 1.1. Drawing Character 1.2. Drawing Background	**12**
10	**Anatomy & Body Language** 10.1. Character Anatomy 10.2. Animal Anatomy	**10**
11	**Introduction to equipment required for animation** 11.1.Tracking Shots 11.2.Pencil Test	**3**
12	**Developing the characters with computer animation.** 12.1.Adapting to Digital 12.2.Lip Synch	**6**
13	**2D virtual drawing for animation, sequential movement drawing** 13.1.Internet Props & Cons 13.2.Vector Animation	**8**
14	**Thumbnails, motion studies , drawing for motion.** 14.1.Animation GIF 14.2.Case Study	**6**
15	**Essentials & qualities of good animation characters** 15.1.Animating Character 15.2.Camera Techniques	**3**
16	**Three dimensional drawings of characters** 16.1.Perspective Design 16.2.Overview of CGI	**8**

Reference Books :

1. The Complete Animation course by Chris Patmore, By – Barons Educational Series (New York)
2. Anatomy of the Artist – Thompson & Thompson

AN- 1104 , Paper IV : Foundation Art		
Objectives : *To understand drawing as the most powerful visual representation, to make hands free. Learn to create simple objects, Perspective drawing, lights and shades, how to create cartoons drawing.*		
Chapter No.	**Topic Name**	**Number of Lectures**
1	**Skills required for an Animation Artist** 1.1 Introduction to Visual and Creative development of an artist. 1.2 Introduction to Light & shade. 1.3 Introduction to Grayscale pencil shading.	**8**
2	**Introduction to Colors** 2.1 Different types of Methods Additive and Subtractive 2.2 Introduction to Pigment colors 2.3 Introduction to Harmony and Schemes 2.4 Tint, Shade, Value 2.5 Warm Colors 2.6 Cool Colors	**12**
3	**Introduction to Visual Design** 3.1 Elements and Principles of Design 3.2 Elements of Design 3.3 Line 3.4 Color 3.5 Shape 3.6 Categories 3.7 Texture 3.8 Space 3.9 Form	**10**
4	**Principles of design** 4.1 Unity/Harmony 4.2 Methods 4.3 Balance 4.4 Types 4.5 Scale/proportion 4.6 Dominance/emphasis 4.7 Similarity and contrast	**10**
5	**Introduction to Design** 5.1 Introduction to 2D Design and 3D Design 5.2 Elements of 2D and 3D Design 5.3 How to create 2D and 3D Design using Elements and Principles.	**5**
6	**Introduction to Volume Construction** 6.1 Heads 6.2 Key Lines 6.3 Volume Construction 6.4 Balance 6.5 Muscles	**10**

7	**Introduction to Perspective Drawing** 7.1 Introduction to Perspective 7.2 Different types of Perspective 7.3 Different types of Eye Levels	**8**
8	**Introduction to Human Figure** 8.1 Introduction to gestures Draw 8.2 Introduction to Quick Sketches 8.3 Drawing Human Figures 8.4 Basic Proportions	**10**
9	**Introduction to Cartoon Character** 9.1 Cartoon volume construction 9.2 Anatomy of Cartoon Character 9.3 Drawing for Animation Characters	**8**
10	**Introduction to Foreshortening** 10.1 Hands & Leg 10.2 Foreshortening 10.3 Facial expressions 10.4 Sketching from live models 10.5 Shape and Action	**10**
11	**Introduction to Animal Anatomy** 11.1 Introduction to Bipeds and quadrupeds 11.2 Basic body plan – axes and volumes 11.3 Introduction to Animal skeleton 11.4 Study of Animal anatomy – Dog, Horse, Monkey	**5**
Reference Books		
1. Figure Study Made Easy By- Aditya Chari -- Grace Publication 2. Perspective By Milind Mulik -- Jyotsna Prakashan 3. Animal Anatomy for Artists – The Elements of Form – Eliot Goldfinger - Oxford University Press. **Links:** 1. http://en.wikipedia.org/wiki/Color_theory 2. http://www.colormatters.com/color-and-design/basic-color-theory 3. http://en.wikipedia.org/wiki/Design_elements_and_principles 4. http://www.usability.gov/what-and-why/visual-design.html 5. http://en.wikipedia.org/wiki/Typography		

AN- 1105 , Paper V : Computer Based 2D Animation		
Chapter No.	**Topic Name**	**Number of Lectures**
1	**Overview of Flash** 1.1. Workflow Basics 1.2. Establish the concept and goals 1.3. Producing, Testing, and staging the presentation.	**6**

2	**Introduction to the flash interface** 2.1. Start Page 2.2. Managing windows and Panel 2.3. Creating custom workspace Layouts	**4**
3	**Setting stage dimensions, working with panels, panel layouts** 3.1. Managing Windows and Panels 3.2. The Tool Panels 3.3. The Document	**4**
4	**Introduction to drawing and drawing tools in Flash** 4.1. Geometric Shape Tools 4.2. Drawing Tools 4.3. Using Fill and Stroke Controls	**4**
5	**Panels - Description , modifying , Saving & deleting a panel** 5.1. Controlling the Tools Panel 5.2. Reading the tools Panel 5.3. Customizing the tools panel	**4**
6	**Layers & Views** 6.1. Creating Layers 6.2. Editing frames and layers 6.3. Using Frame view options	**8**
7	**Shaping Objects – Overview of shapes, Drawing & Modifying Shapes** 7.1. Designing and Aligning Elements 7.2. Simplifying snapping setting 7.3. Design Panels	**10**
8	**Basic Principles of Text** 8.1. Text Field Types in Flash 8.2. The Text Tool and the Properties Panel 8.3. Front Export and Display	**8**
9	**Bitmap Images & Sounds** 9.1. Defining Vectors and Bitmaps 9.2. Indentifying sound File Import and Export Format 9.3. Editing Audio in Flash	**10**
10	**Object Selection, working with objects & transforming Objects** 10.1. Selection with Objects 10.2. Working & Editing Objects 10.3. Transforming Objects	**10**
11	**Animation -Principles , Frame by frame animation, tweening, masks** 11.1. Basic Method of Flash Animation 11.2. Frame by Frame Animation 11.3. Using Tweens for Animation	**12**
12	**Building a Movie- Symbol, Libraries, Structure & Exporting Movie** 12.1. Understanding the Document Library. 12.2. Editing Symbols. 12.3. Modifying Instance Properties.	**12**

Reference Book :

1. Flash CS4 Professional Bible Published by Wiley Publishing (Robert R & Snow D.)
2.FLASH MX For PC/Mac Published by – FIREWALL MEDIA – Laxmi Publications

AN- 1106 , Paper VI : Introduction to Graphics (Introduction to Photoshop)		
Chapter No.	**Topic Name**	**Number of Lectures**
1	**Workspace** 1.1 Workspace basic 1.2 Palettes and Menus 1.3 Toolbar – selection tools, painting tools, editing and retouching tools, zoom tools 1.4 Viewing images 1.5 Ruler, Guide and Grids	**4**
2	**Preferences** 2.1 Recovery and undo 2.2 Memory and Performance 2.3 Photoshop Images 2.4 Image size and Resolution 2.5 High dynamic range images	**5**
3	**Colors** 3.1 About color 3.2 Color modes 3.3 Converting between color modes	**2**
4	**Introduction to Menus** 4.1 File 4.2 Edit 4.3 Image 4.4 View	**6**
5	**Selecting** 5.1 Making selections 5.2 Adjusting pixel selections 5.3 Moving and copying selected pixels 5.4 Deleting and extracting objects 5.5 Saving selections and using masks	**4**
6	**Introduction to Menu – Layer** 6.1 Layers 6.2 Selecting, grouping, and linking layers 6.3 Moving, stacking, and locking layers 6.4 Managing layers 6.5 Setting opacity and blending 6.6 Layer effects and styles 6.7 Adjustment and fill layers 6.8 Masking layers	**5**

	6.9 Introduction to Channels	
7	**Making color and tonal adjustments** 7.1 Viewing histograms and pixel values 7.2 Understanding color adjustments 7.3 Adjusting image color and tone	**5**
8	**Introduction to Types** 8.1 Different Types Tools 8.2 Character Panel 8.3 Paragraph	**3**
9	**Menu – Filters** 9.1 Introduction to Filter basics 9.2 Filter effect 9.3 Applying specific filters 9.4 Add Lighting Effects 9.5 Liquify filter 9.6 Vanishing Point 9.7 Create panoramic images	**8**
10	**Automating tasks** 10.1 Automating with actions 10.2 Creating actions 10.3 Processing a batch of files 10.4 Scripting	**6**
11	**Introduction to Adobe Illustrator** 11.1 Illustrator is a sophisticated vector drawing tools.	**2**
12	**Introduction to new document** 12.1 Selection tool 12.2 Group selection 12.3 Selection lassos 12.4 Magic wand selection 12.5 The Pen Tools 12.6 convert anchor point	**4**
13	**Layers and Grouping** 13.1 layers introduction 13.2 Organizing layers 13.3 selecting layers 13.4 Grouping layers 13.5 Group selection 13.6 Duplicating layers 13.7 Sub-layers 13.8 Collect and flatten 13.9 Creating templates 13.10 Placing paths	**4**
14	**Introduction to the Stroke** 14.1 The Stroke 14.2 Stroke basics 14.3 Capitals and joining 14.4 The dashed line	**3**

	14.5 Scaling strokes	
15	**Introduction to Type** 15.1 The type tool 15.2 Area type tool 15.3 Path type 15.4 Vertical type tool 15.5 Block text 15.6 Rows and columns 15.7 Wrap text 15.8 Missing font 15.9 Creating outlines 15.10 Spell checking 15.11 Font attributes 15.12 Character palette 15.13 Formatting paragraphs 15.14 Type transformation	**2**
16	**Introduction to Shape Objects** 16.1 Rectangle tool 16.2 Rounded rectangle tool 16.3 Ellipse tool 16.4 Polygon tool 16.5 Star tool 16.6 Flare tool 16.7 The spaz modifier 16.8 Transformations	**4**
17	**scale tool** 17.1 Scaling patterns 17.2 Rotation tool, Rotating a pattern 17.3 Reflect tool, Twist tool, sheer tool, Reshape tool 17.4 Re-positioning art, Aligning and Distributing, object alignment 17.5 Mouse directed movement, Line Tools, line segment tool 17.6 Arc tool, Spiral tool, Rectangular grid tool, Polar grid tool 17.7 Spaz line tool, Moving lines 17.8 Compound Path and Clipping Mask	**5**
18	**clipping masks** 18.1 Clipping paths 18.2 Applying Color 18.3 Color introduction 18.4 Adobe color picker 18.5. color palette 18.6 Swatches palette 18.7 Color picker theft 18.8 The Pencil Tools 18.9 Basic pencil tool	**5**

	18.10 Smooth tool 18.11 Eraser tool	
19	**The Brush Tool** 19.1 Paintbrush introduction 19.2 Calligraphic brush 19.3 Art brush 19.4 Pattern brush 19.5 Loading and saving brushes	**5**
20	**Gradients** 20.1 Gradients introduction 20.2 Editing gradients, Gradient libraries 20.3 Transparency and Masking 20.4 Object opacity, Targeted transparency 20.5 Transparency clipping, masking, knockout group 20.6 blending modes, Enveloping and Meshes 20.7 envelope introduction, using the warp, the mesh 20.8 Utilizing the top object, text distortions 20.9 Smart Guides and Rulers, rulers introduction 20.10 creating guides, smart guides, extruding text, smart guide options, grids, 20.11 Measure and info tools, Scissor and Knife, the scissor tool, the knife tool	**6**
21	**Liquefy** 21.1 Liquefy tools 21.2 More lignifications, Appearance and Styles, Styles introduction 21.3 Multiple strokes and fills, Converting effect to shape, Group appearance 21.4 The text bug, Distort and transform, Offset path effect 21.5 Pathfinder effects, Rasterizing 21.6 Document rasterization, Stylize effects, Pixel effects, Warp effects 21.7 Moving and linking styles, Sticky styles, Reducing and clearing styles 21.8 Making and saving styles, Over-riding character color 21.9 Filter introduction, Creating trim marks 21.10 Pen and ink, More lignifications, The Blend Tool 21.11 Blending introduction, Blending multiple objects 21.12 Customizing the Keyboard, Creating your own shortcuts	**8**

Reference books

1. Adobe Photoshop Bible cs5 by Lisa Danae Dayley,brad dayley --- Wiley india ISBN 13 - 9788126527199
2. Adobe Photoshop CS6 (Clasroom in a Book) ISBN – 978-81-317-9164-6 By PEARSON Publications
3. Adobe Illustrator CC Classroom in a Book ISBN:9789332536166, Pearson
4. ADOBE ILLUSTRATOR CS5 BIBLE

ISBN 13 : 9788126527809
Wiley India

AN- 1107 , Paper VII : Elements of 3D Design		
Chapter No.	**Topic Name**	**Number of Lectures**
1	**Concept of 3 Dimension** 1.1. Concept of CGI. 1.2. Production Workflow of CGI. 1.3. Basic Introduction concept of 3D Software's (3ds Max and Maya).	4
2	**Beginning Concept Modeling in Maya** 2.1. Introduction of Maya Interface. 2.2. Polygon Basic Modeling. 2.3. Basic Polygon Editing Tools. 2.4. NURBS Basic Modeling. 2.5. Basic NURBS Editing Tools	21
3	**Idea of Shading & Texturing** 3.1. Introduction Types of Shader. 3.2. Texture and Surface. 3.3. Basic UV Mapping. 3.4. Texture Nodes. 3.5. Importing an Image File as a Texture.	20
4	**Concept of Lighting and Rendering** 4.1. Basic Lighting Concept. 4.2. Maya Light. 4.3. Adding Shadow. 4.4. Introduction Basic Rendering setup. 4.5. Render Image Format.	20
5	**Introduction of Interface** 5.1. Introduction Interface of 3ds Max. 5.2. Modeling Concept and Primitives. 5.3. Editable Poly Tool. 5.4. Introduction of Spine Modeling. 5.5. Import & Export File Management.	16
6	**Basic Material And Rendernig in 3D Max** 6.1. The Material Editor. 6.2. Material Types. 6.3. Basic Introduction of Lighting. 6.4. Creating Shadow.	16

	6.5. Basic Rendering setup.	

Reference Book:
3ds Max - Introducing 3ds Max 2009 / 2012 / 2014 3D for Beginners by **DARIUSH DERAKHSHANI.**
Introduction-to-maya-2011 / 2012 / 2014 by **DARIUSH DERAKHSHANI.**

AN- 1108 , Paper VIII : Introduction to Mass Communication and Media Literacy

Chapter No.	Topic Name	Number of Lectures
1	**Mass Communication, culture & Media literacy**	**12**
2	**The Evolving Mass Communication Process**	**7**
3	**Media, Media Industries & Media Audiences** 3.1 Books (6) 3.2 Newspapers (4) 3.3 Magazines (5) 3.4 Films (5) 3.5 Radio & Recording (5) 3.6 Television & Mobile Video (6) 3.7 Video Games (5) 3.8 The internet & Web (5)	**41**
4	**Supporting Industries** 4.1 Public Relations (6) 4.2 Advertising (8) 4.3 Theories & Effect of Mass Communication (6) 4.5 Media Freedom, Regulations and ethics (8) 4.6 Global Media (8)	**36**

Reference Books:

1. Mass communication in India, By Keval J. Kumar
2. Mass Communication Theory by Denis Mcquail

AN- 1109 , Practical Paper I : Introduction to Programming Languages

1. Write a Program which take a input marks obtain in 4 subject and print marks obtain in 4 Subject and percentage (in float) also print student is pass or fail (student is fail if he/she Obtain less than 35 marks in any of four papers
2. write a C program find the Area and Perimeter and Square and Rectangle
3. Write a C program find the find max, Among 3 integer numbers. And also print square of the maximum number

4. Write a C program to check whether the number is prime or not(Write a function to check number is prime).

5. write a C program to print GCD of two integers
   (Write a function to find GCD).
6. Write a C program to print addition of Array elements.
   (Number of array element will be 5 and take the array element from user)

7. Write a C program to find an element in array.
   (Number of array element will be 5 and take the array element from user)
8. Write a C program to calculate n! Factorial.

9. Write a C program to read two strings and explain string library function.
   1)strlen()
   2)strcyp()
   3)strcat()
   4) strcmp()

10. write a C program to which contain function to obtain first 25 number of a Fibonacci series

11. Write a C program using switch case which perform math's operation (+,-,*, /, %)

12. Write a C program to display an element of 2 dimensional arrays in matrix form. (Array size is 3x3 and takes the array element from user)

13. Write a C program demonstrate use of structure declare following structure and write m menu driven program display student info and to find student name in data

14. . Define a class string. Use different constructors and do the following [20 marks]
    - Create un-initialized string objects
    - Create objects with string constants
    - Concatenate two strings
    - Display desired strings

15. Write a class and member functions for a class complex as follows

```
Class complex
{
        int re, img;
         public :
         complex(int =0, int=0);
        complex(complex &);
        void accept();
         void display();
         complex add(const complex &);
```

16. Write necessary class and member function definitions for a cricket player object. (Use array of objects).
The program should accept details from user (max 10) : player code, name, runs, Innings, played, number of times not out.
The program should contain following menu:

- Enter details of players.
- Display average runs of a single player.

Average runs of all players.

17. Write a program that consists of two classes' time12 and time24. The first one maintains time on a 12-hour basis, whereas the other one maintains it on a 24-hour basis. Provide conversion functions to carry out the conversion from object of one type to another

18. Create a C++ class mydate with three members dd,mm,yy. Write a menu driven Program with the following options.
-Increment date by 1 day. -Subtract 2 days from date.
(Use function overloading).

19. Create two classes dist1(meters, centimeters) and dist2(feet, inches).
Accept two distances from the user, one in meter and centimeter and other in feet and inches. Find the sum and differences of the two distances. Display the result in both, meters and centimeters as well as feet and inches (using friend function).

20. Create a base class called Shape. Use this class to store two double values that could be used to compute the area of figures. Derive three classes called as triangle, rectangle and circle from the base Shape.
Add to the base class a member function get_data() to initialize base class data members and another member function display_area() to compute and display the area of figures. Make display_area() as a virtual function and redefine this function in the derived classes to suit their requirements.
Using these four classes, design a program that will accept, dimensions of a triangle and rectangle and radius of circle, and display the area.The two values given as input will be treated as lengths of two sides in the case of rectangles and as base and height in the case of triangles and used as follows :
Area of rectangle = x * y
Area of triangle = ½ * x * y
[In case of circle, get_data() will take only one argument i.e radius so make the second argument as default argument with the value set to zero.]

21. Write a C++ program using multilevel inheritance concept which will display student information (Roll number ,marks obtain in two subject, total marks) use following information

- Class student to get and put roll number, class test to get and put marks of two subject & test will inherit class student
- Class Result to compute and display total marks

22. C ++ program to demonstrate runtime polymorphism and display information of book (Title, price, number of pages) and Tape (Title, price, time). use following information

- Class media with parameter to initialize media information title and price & virtual function display
- Class Book will inherit media & it will contain data member number of page and display function

Class tape will inherit class media & it will contain data member time and display function

AN- 1110 , Practical Paper II : Foundation Art and Basics of Animation

1. Free hand Drawing
2. Color Schemes
3. Color Value
4. Pencil shading
5. 2D Design
6. 3D Design
7. One point Perspective
8. Two point Perspective
9. Three Point perspective
10. Interior Design One Point Perspective
11. Exterior Design Two Point Perspective
12. Object Drawing
13. Manmade Drawing
14. Gesture Drawing
15. Basic Proportion Male, Female and Child
16. Head Construction Male and Female Child
17. Volume Construction Legs and Hands
18. Live Model Sketching
19. Outdoor Study Landscape (Sem I)
20. Outdoor Study Landscape (Sem I)

AN- 1111 , Practical Paper III : Introduction to Graphics + Computer Based 2D Animation

1. Adding and Removing elements from background
2. Creating visiting card
3. Photo manipulation
4. Converting black and white photo to Color
5. Removing scratches and restoring old photos
6. Coloring Cartoon/Comic Character
7. Coloring Comic Page/Pages

8. Coloring vehicle/weapons/props
9. Landscape colouring
10. Portrait Painting (Digital)
11. Matte painting
12. Shapes Compostion
13. Create tattoo Designs
14. Create own text A to Z
15. Logo Design
16. Branding Visting Card, Letter head, Envelop Design
17. Brochure Design
18. Advertise Design
19. Product modeling illustration
20. Car Modeling
21. Character Design

AN- 1112 , Practical Paper IV : Introduction to 3D Design

1. Object Modeling/Inorganic Modeling (Low and Semi Poly Mesh). Example of Topics: Wooden chair, Table/Desk, Cricket Bat / Dice, Mobile etc
2. High Polygon Modeling. Example Topics: Human Hand /Foot, Tire Treads etc..
3. Basic NURBS Modeling. Wine Glass/ Bottle, candle and Candle Stand etc
4. Details on NURBS Modeling. Wheel Rim / Lalten, light Lamp..etc
5. Object Texture (Material Introduction) Example of Topics: Wooden Texture Table/Desk,
6. Object Texture (shader /Material) Object Texture (shader /Material)
7. Texture connection from file Chess board, Ludo Game
8. Texture Connection. Dice texture in basic box
9. Basic Lighting Practical. Shortcut of lighting, object glow (candle)
10. Light and Shadow. Connect light and create shadow
11. Render setup with camera. Object Render with shadow
12. Batch Render. Batch Render with Project Management.
13. Basic Object Modeling. Pen, pencil,
14. Details Object Modeling. Cupboard, wall clock
15. Spine Modeling. Wine Glass, Bottle
16. Details Spine Modeling. Coffee Mug, Water Jug
17. Basic Material Color. Apply color in different object
18. Texture in Detail Model. Wall clock / Cupboard
19. Creating Shadow. Introduce with Light and Shadow
20. Basic Rendering. Render with Different format and save it