

ABEDA INAMDAR COLLEGE PUNE

Certificate Course in Visual Effects

(Faculty of Science & Technology)

Visual Effects

Choice Based Credit System Syllabus

To be implemented from Academic Year 2021-2022

Title of the Course: Certificate Course in Visual Effects

Preamble:

The field of cinema is rapidly changing. With the advent of 2D and 3D stereoscopic, the way of looking and experiencing films is altering. VFX has grown tremendously in the past decade because of the onslaught of new and changing technology. Visual effect is used in games, movies and television shows. With the advanced technology and equipment Hollywood and Bollywood uses VFX to create overwhelming effects and realistic environments. The VFX is usually done at the last stage that is the postproduction in editing but it is planned at the preproduction and production stage under the guidance of the director and VFX supervisor after the story is finalized. Therefore, the faculty of the computer science department has felt the requirement to start with a certificate course in VFX. This course is of six month and has been prepared while keeping both students and working professionals in mind.

Introduction:

To prepare students for the field of visual arts and equip them with all the necessary tools that this field requires. Making seamless and photorealistic renders is the prime objective of this course. The aim of this 6-Month course is also to equip the students with skills that will help them find employment in the global market. However, adding VFX can be a humongous task and involves a lot of people for rendering a perfect shot. Therefore, artists should be able to have full control over their images. VFX is not only used for science fiction or fantasy film but is also used in period drama. Upon completing the graduation, the passed-out students can work in: TV channels/ Production houses VFX studios Gaming Industry Media and Advertising Also as an independent freelancer.

PREREQUISITE:

- Students must have basic operational knowledge of computers.
- Students must understand English language.
- Students must have basic knowledge of the Internet.

Duration: The Program comprises six months.

EVALUATION: Six-month program with the combination of 60% External Marks and 40% Internal Marks.

Number of seats: 60

Eligibility: 10+2 Any Stream

Titles of Papers, Credit Allocation and Scheme of Evaluation

(Total credits=30)

Paper Code	Course Type	Paper title	Credits		Evaluation		
			T	P	CE	SEE	Total
21AUCCV FX101	Core Credit Theory	The Art of Video Editing (Th)	4		40	60	100
21AUCCV FX102	Core Credit Theory	Fundamentals of Visual Effects	4		40	60	100
21AUCCV FX103	Core Credit Theory	Introduction to Entrepreneurship and soft skill (Th)	4		40	60	100
21AUCCV FX104	Core Credit Practical	Video Editing in Premiere Pro (Pr)	-	4	40	60	100
21AUCCV FX105	Core Credit Practical	Rotoscoping in After Effects (Pr)	-	4	40	60	100
21AUCCV FX106	Core Credit Practical	VFX Compositing with After Effects (Pr)	-	4	40	60	100
21AUCCV FX107	Core Credit Practical	Project/Portfolio	-	4	40	60	100
21AUCCV FX108	Core Credit Practical	On Job Training	-	2	20	30	50
Total			12	18	300	450	750

Abbreviation:

T: Theory

P: Practical

CE: Continuous evaluation

SEE: Semester End Examination

*On Job Training should be carried out in any one stream at the end of certificate course, duration of the training must be of one month minimum.

Paper - I

Course Type: Core Course Theory

Course Code: 21AUCCVFX101

Course Title: The Art of Video Editing

Teaching Scheme 5 Hours / Week

Examination
Scheme
CE: 40Marks
SEE: 60Marks

Course Objectives

1. The history of editing is the story of filmmaking itself. As filmmaking evolved, so did the art of editing, with constant innovation and new discoveries.
2. Video Editing is a fundamental component of filmmaking. It is an art of composing space (as totality or fragment, continuous or discontinuous) and time (linear or nonlinear) through the arrangement, assembly and interaction of images (static or dynamic) and sounds (on screen or off screen).
3. Editing includes storytelling, rhythm, tempo, and emotion. A good editing sense is absolutely necessary to creatively structure a cinematic work.
4. This course will teach students the basic knowledge and concepts of editing, and develop their editing sense in practical editing assignments.

Course Outcomes: - On completion of this course, students will be able to:

1. Identify the various components of Video Editing.
2. Identify the basic knowledge and concepts of editing.
3. How to Make Smart Editing Decisions

Course Contents

Chapter 1	An introduction to the project and the development of the artifact	10 Hours
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- 1.1 The Artifact
- 1.2 Background for the project
- 1.3 The production of the artifact
- 1.4 Creative challenges in shooting and editing the interviews
- 1.5 The Exegesis

Chapter 2	The Art of Editing	16 Hours
2.1 Editing - the hidden art 2.2 A Brief History of Editing 2.3 Montage and mise-en-scene 2.4 The rise of the auteur and the impact on filmmaking today 2.5 Film editing today 2.6 How editors view their work in terms of art or craft 2.7 In summary: good film, good editing		
Chapter 3	Looking at film editing through the prism of film theory	10 Hours
3.1 Where does editing sit as a ‘concept’ in terms of film theory 3.2 There is no one predominant film theory 3.3 Where does film theory sit in terms of filmic investigation and analysis in practice-based studies 3.4 What insights did the early film theorist-practitioners bring to academic discourse as relevant to the practice of editing today 3.5 Film Theory opens up the scholarly discussion on filmic investigation and representation of space 3.6 In summary: investigating editing through the prism of film theory		
Chapter 4	Insights into teaching creative editing practice	12 Hours
1.1 Creativity, can it be taught 1.2 How editors learn their craft 1.3 Film schools are not a new concept 1.4 The new film schools 1.5 In Summary: the challenge of teaching creative editing		
Chapter 5	The nexus of theory and practice in teaching creativity in editing	12 Hours
5.1 The nexus of theory and practice 5.2 Studio-based learning and collaboration in creativity 5.3 Visual Aided Learning 5.4 In Summary: teaching creativity in editing		
Reference Books:		
1. Creative Practice and Pedagogy by Jillian Holt. 2. The Art of Editing Raymond Carver and David Foster Wallace		

Paper - II

Course Type: Core Course Theory

Course Code: 21AUCCVFX102

Course Title: Fundamental of Visual Effects

Teaching Scheme 5 Hours / Week

Examination
Scheme CE:
40Marks
SEE: 60Marks

Course Objectives

1. Digital compositing is a key component of today's visual effects, which create fantastic and exciting images for audiences everywhere.
2. Visual effects have become a mainstay in modern filmmaking.
3. The tools are new, but the principles have been the same since the dawn of cinema.
4. In this course we will cover all the important principles and tools of modern visual effects and we will recapitulate the history and development of modern techniques.
5. This class will teach the fundamentals of Visual Effects.

Course Outcomes: - On completion of this course, students will be able to:

1. The students analyze complex visual effects in movies.
2. The Students will become familiar with the interface and the basic concepts of the software.
3. Students will gain some insight in the compositing tools and how they apply to the creation of visual effects.

Course Contents

Chapter 1	OVERVIEW AND ROTO FOUNDATIONS	4 Hours
1.1 About Rotoscoping 1.2 Splines 1.3 Articulated Rotos 1.4 Interpolation 1.5 Keyframes 1.6 Motion Blur 1.7 Semi-transparency		
Chapter 2	Introducing Roto Paint's Interface	8 Hours
2.1 Painting strokes 2.2 Editing strokes 2.3 Painting in vectors 2.4 Erasing and deleting strokes 2.5 Drawing and editing shapes 2.6 Animating a shape 2.7 The Curve Editor 2.8 Painting in Practice 2.9 Split-Screening Twins with Roto 2.10 Combining Paint, Roto, and Animation		
Chapter 3	Compositing Visual Effects	8 Hours
3.1 Green/Blue Screen Compositing 3.2 Motion Tracking 3.3 Warping and Morphing 3.4 Crowd Duplication 3.5 Atmospherics 3.6 Scene Salvage 3.7 Digital Compositing with CGI 3.8 Set Extension 3.9 Match Move		
Chapter 4	Digital Images	7 Hours

4.1 Structure of Digital Images		
4.2 Attributes of Digital Images		
4.3 Image Resolution		
4.4 Image File Formats		
4.5 DPI		
Chapter 5	Compositing CGI	10 Hours
5.1 The CGI Composite		
5.2 Multipass Compositing		
5.3 Depth Compositing		
5.4 Multiplane Compositing		
5.5 Working with Remultiplied CGI		
5.6 3D Compositing		
Chapter 6	Blue Screen Compositing	9 Hours
6.1 The Blue Screen Composite		
6.2 About Keyers		
6.3 Helping the Keyer		
6.4 Compositing Outside the Keyer		
6.5 Shooting Bluescreens (and Green Screens)		
Chapter 7	Creating Masks	8 Hours
7.1 Key, Matte, Alpha, and Mask		
7.2 Creating a Luma-key		
7.3 Creating a Chroma-key		
7.4 Creating a Mask		
7.5 Drawing Shapes		
Chapter 8	The Art of Compositing	6 Hours
8.1 Color Correcting		
8.2 Matching Layer Attributes		
8.3 Sweetening the Composite		
8.4 A Checklist		
8.5 Color Correction		
Reference Books:		
1) Compositing Visual Effects by Steve Wright Publisher(s): Routledge		
2) Professional Compositing and Visual Effects by Ron Ganbar		

**Paper -
III**

Course Type: Core Course Theory

Course Code: 21AUCCVFX103

Course Title: Introduction to Entrepreneurship and soft skill

Teaching Scheme 5 Hours / Week	No. of Credits 4	Examination Scheme CE: 40Marks SEE: 60Marks
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Course Objectives

1. To introduce the fundamentals of entrepreneurship.
2. To develop the ability to Understand the characteristics of the various forms of business organization
3. To understand structured approach towards being a successful entrepreneur.
4. To develop plan of launching a start-up
5. To develop business -solution model around the current problems
6. To understand digital marketing as a tool for entrepreneurs.

Course Outcomes: - On completion of this course, students will be able to:

1. Explore various ideas and business models around the business idea.
2. Plan the core component and elements required to start a successful start-up.

Course Contents

Chapter 1	Fundamentals of Entrepreneurship	3 Hours
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1.1 What is the mindset of an entrepreneur 1.2 Identifying a problem 1.3 Need Analysis 1.4 Sensing solution among the problems 1.5 Developing the seed “The Idea” 1.6 Searching market moves & trend 1.7 Understanding Creativity and Innovation 1.8 Opportunity finding and taking the right approach.		
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Chapter 2	Develop the Plan for Startup	7 Hours
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2.1 Taking first steps to develop a business model. 2.2 Selecting the right type for registering the business. 2.3 Business Plan: concept, format. 2.4 Components: Organizational plan; Operational plan; Production plan; 2.5 Financial plan; Marketing plan; Human Resource planning		
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Chapter 3	Branding & Marketing of Start-up	10 Hours

3.1 Developing a brand around the idea. 3.2 Branding, Logo, Tagline 3.3 Copyright, trademark and Patent for start-up 3.4 Planning a strategy for promoting the start-up 3.5 The Art of negotiation and methods 3.6 Customer Relationship Management 3.7 Vendor Management 3.8 Developing the minimum viable product 3.9 Sales and marketing plan		
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Chapter 4	Growing the Startups	10 Hours
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4.1 Lean startup growth 4.2 Making a growth plan for the startup. 4.3 Concept of Franchising the startup 4.4 Mergers and Acquisition: Concept, reasons, types. 4.5 Reasons for failure of Mergers and Acquisitions.		
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Chapter 5	Cost, Expenses, Inventory and ROI	10 Hours
5.1 Unit of Sale, Unit Cost for multiple products or services 5.2 Break even Analysis for multiple products or services 5.3 Computation of Working Capital 5.4 Inventory Control and EOQ 5.5 Return on Investment (ROI) and Return on Equity (ROE)		
Chapter 6	Resource Mobilization	5 Hours
6.1 Capital Market- Primary and Secondary 6.2 Stock Exchange- Concept, features, functions and importance 6.3 Securities and Exchange Board of India- History, establishment, powers 6.4 Angel Investor: Features 6.5 Venture Capital: Features, funding		
Chapter 7	Digital Marketing as Marketing Tool	15 Hours
7.1 What is Digital Marketing 7.2 Growth of digital marketing 7.3 Benefits of digital marketing 7.4 Different digital marketing channels 7.5 Setting up digital marketing budgets		
Reference Books:		
1 - Udyamita (in Hindi) by Dr. MMP. Akhouri and S.P Mishra, pub. By National Institute for Entrepreneurship and Small Business Development (NIESBUD), NSIC-PATC Campus, Okhla 2-Entrepreneurship development & management (English, Paperback, V. K. Joshi) Publisher: Jagdamba Publishing Company ISBN: 9789380280462, 9380280462		

3-Entrepreneurship Paperback – 1 July 2020 by Rajeev Roy Publisher: OUP India; 3rd edition (1 July 2020) Language: English Paperback: 600 pages ISBN-10 : 0190125306

4- Safalta Ki 22 Chabiyaan (In Hindi) by Dr. Rishi Acharya pub. by Notion Press Chennai ISBN-10 : 1947027514

Magazines

- Udyamita Samachar Patra (Monthly, Hindi), Pub. By Centre for Entrepreneurship Development, M.P. (CEDMAP), 60 Jail Road, Jhangerbad, Bhopal-462008.

- Science Tec. Entrepreneur (A Bi Monthly Publication), Centre for Entrepreneurship Development, M.P (CEDMAP), 60 Jail Road, Jhangerbad, Bhopal -462008

Paper - IV

Course Type: Core Course Practical

Course Code: 21AUCCVFX104

Course Title: Video Editing in Premiere Pro

Teaching Scheme 4hrs 20 mins Hrs. / week	No. of Credits 4	Examination Scheme CE: 40Marks SEE: 60Marks
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Course Objectives

1. This course will take you through the basics of learning video editing with one of the most elite and professional video editing software's available.
2. Premiere Pro is easy to use and there is so much room to grow into the professional video editor you always wanted to be.
3. Adobe Premiere Pro is the best video editing program you can use & it's so compatible with the Adobe family which a great plus for the program and makes your workflow easy and productive.

Course Outcomes: -

On completion of this course, students will be able to:

1. Creating a project.
2. Organizing files and importing the footage
3. Getting to know the interface
4. Creating sequences
5. Basic editing tools and shortcuts
6. Adding effects to your footage and familiarize keyframes
7. Basic audio effects and controls
8. Exporting video and presets for different platforms

Guidelines:

Lab Book: The lab book is to be used as a hands-on resource, reference and record of assignment submission and completion by the student. The lab book contains the set of assignments which the student must complete as a part of this course.

Submission:

Length. Your video should be 4–7 minutes in length, plus time for a “credit roll” to show your references. **Style.** There are no restrictions on the style of the video (i.e., you may use a narrated slideshow, a recorded lecture, a digital whiteboard, a stop motion animation (Claymation), a sock puppet show, animated graphics, a scripted scene, filmed artist drawings on paper, “man on the street” interviews, a combination of the above, etc.) **Title slide.** Your video should begin with a descriptive title, your name(s), the name of the school, and the year in which it was created. **Original content.** Aim to create your own resources. That means using your own drawings, pictures, music, animations, filmed scenes, and interviews. Where this is not possible, be sure that you only use material which falls under Creative Commons license (that you can use and modify without breaking copyright laws).

Credits. Acknowledge the people who contributed to the video, including yourself, your interviewees, narrators and actors, people who supported the production, and your instructor, and specify that the video was made within the context of this course (course number, institution, date).

File format. Your video must be submitted in one of the following file formats: .mov, .mv4, mp4, .wmv.

Note that these are rendered movies, that is, files that will play on someone else’s computer. Be sure to test your finished product ahead of the deadline

Assessment:

Continuous assessment of Computer lab work is to be done based on overall performance and lab assignments performance of student. Each lab assignment assessment will be assigned grade/marks based on parameters with appropriate weightage. Suggested parameters for overall assessment as well as each lab assignment assessment include- timely completion, performance, creativity

Operating Environment:

For Editing and Making Final Video

Operating system: Windows 10

Software: Premiere Pro

Suggested List of Assignments:

Assignment 1.

Check the Interface of Premiere, Tools, Panels and Effects

Assignment 2.

Create a Sequence and a Basic Video Line up

Assignment 3.

Adding video transitions & Basic CC

Assignment 4.

Adding Audio & Audio Transition

Assignment 5.

Adding professional and modern titles

Assignment 6.

Stop Motion - Image Sequence- Trimming Images - Time Duration

Assignment 7.

keying Green Chroma - Using Ultra Keyer

Assignment 8.

Cloning (Create Duplicating Person)

Assignment 9.

Color correction (Effect)

Assignment 10.

Slide Presentation

Assignment 11.

Lens & Text Effects

Assignment 12.

Intro Title Sequence

Assignment 13.

Time Remapping

Assignment 14.

Track Matt Effect

Assignment 15.

Lower Third

Books: Lab handbook

Paper - V

Course Type: Core Course Practical

Course Code: 21AUCCVFX105

Course Title: Rotoscoping in After Effects

Teaching Scheme 4hrs 20 mins Hrs. / week	No. of Credits 4	Examination Scheme CE: 40Marks SEE: 60Marks
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Course Objectives

1. In this course, you will learn everything from Mask types to manual roto to fully automated workflows, showcasing After Effects, the industry-standard software for rotoscoping, and its comprehensive roto module.
2. The course begins with an in-depth roto foundations class, then transitions to an extensive tour of the After Effects interface and shot approach tips.
3. The fundamentals of all the Mask types, rotoscoping methodologies including shape creation and keyframing, multiple tracking methods, how to successfully roto a shot from beginning to end.

Course Outcomes: -

On completion of this course, students will be able to:

1. Know what, when and how to do proper rotoscoping.
2. The rotoscoping technique in Adobe After Effects
3. Know how to use After Effects and Mocha AE for rotoscoping live-action shots
4. Basic and advanced techniques in rotoscoping

Guidelines:

Lab Book: The lab book is to be used as a hands-on resource, reference and record of assignment submission and completion by the student. The lab book contains the set of assignments which the student must complete as a part of this course.

Submission:

Your video should be 4–7 Sec in length, plus time for a “credit roll” to show your references. Render should be in Alpha, Color, and with Shapes for final video.

File format. Your video must be submitted in one of the following file formats: .mov, .mv4, mp4.

Note that these are rendered movies, that is, files that will play on someone else’s computer. Be sure to test your finished product ahead of the deadline.

Assessment:

Continuous assessment of Computer lab work is to be done based on overall performance and lab assignments performance of student. Each lab assignment assessment will be assigned grade/marks based on parameters with appropriate weightage. Suggested parameters for overall assessment as well as each lab assignment assessment include- timely completion, performance, creativity

Operating Environment:

For VFX Rotoscoping and Tracking

Operating system: Windows 10

Software: After Effects

Suggested List of Assignments:**Assignment 1.**

Check the Interface of After Effects, create a single Mask using Pen Tools.

Assignment 2.

Create a ball animation using shapes

Assignment 3.

Create multi mask using solid layer

Assignment 4.

Basics of using tracking and rotoscoping together

Assignment 5.

Using multiple trackers to capture rotation and scaling

Assignment 6.

Using multi-Masking create human rotoscoping

Assignment 7.

Create a Stereo Roto on human character

Books: Lab handbook

Paper - VI

Course Type: Core Course Practical

Course Code: 21AUCCVFX106

Course Title: VFX Compositing with After Effects

Teaching Scheme 4hrs 20 mins Hrs. / week	No. of Credits 4	Examination Scheme CE: 40Marks SEE: 60Marks
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Course Objectives

1. After Effects is a Compositing, VFX, and Motion graphics application developed and owned by Adobe Systems.
2. It is generally put to use in the post-production stage of the filmmaking and TV production pipe-line. Besides the features mentioned above, After Effects can effectively perform a handful of jobs as keying, tracking, compositing and animation.
3. With this software application, you can even work on some non-linear editing in Video and Audio platforms.

Course Outcomes: -

On completion of this course, students will be able to:

1. Apply basic and high-level techniques in compositing
2. Know what, when and how to do simple to advanced compositing in Adobe After Effects
3. This course gives an in-depth knowledge of Compositing & Motion Graphics using Adobe After Effects CC.
4. Know how to use Adobe After Effects for simple to advanced compositing of live-action shots

Guidelines:

Lab Book: The lab book is to be used as a hands-on resource, reference and record of assignment submission and completion by the student. The lab book contains the set of assignments which the student must complete as a part of this course.

Submission:

Video should be 2-3min in length, plus time for a “credit roll” to show your references. Render should be in full HD frame size of the video should be 1920*1080.

File format. Your video must be submitted in one of the following file formats: .mov, .mv4, mp4.

Note that these are rendered movies, that is, files that will play on someone else’s computer. Be sure to test your finished product ahead of the deadline

Assessment:

Continuous assessment of Computer lab work is to be done based on overall performance and lab assignments performance of student. Each lab assignment assessment will be assigned grade/marks based on parameters with appropriate weightage. Suggested parameters for overall assessment as well as each lab assignment assessment include- timely completion, performance, creativity

Operating Environment:

For VFX Compositing

Operating system: Windows 10

Software: After Effects

Suggested List of Assignments:**Assignment 1.**

Check all the After Effects Interface Panel

Assignment 2.

Use all the Tools & Effects and Create a Basic Comp

Assignment 3.

Work with Shape Layer and create Ball Animation with Masking

Assignment 4.

Create a Keying Composition using key light & Garbage Mask

Assignment 5.

Replace a Sky Using 1 Point Tracking and create a Sky Replacement Comp

Assignment 6.

Create a Composition using 1 Point Tracking & Key light Chroma Removal

Assignment 7.

Using Motion Tracking Stabilize Video Footage and Track a Shape using Null Object

Assignment 8.

Track the element using 2-point tracking

Assignment 9.

Track a banner using 4-point Tracking

Assignment 10.

Create 3d Tracking Using Camera Track also do a Time Remapping

Assignment 11.

Infographics: Animate a static image also add fake light with CC Light Rays

Assignment 12.

Create Basic Motion Graphics Introduction of Yourself

Assignment 13.

Create Motion Graphics using After Effects Tools

Books: Lab handbook

VFX (Certificate Course Paper Pattern)

a.

Evaluation Criteria: The evaluation of students will be based on three parameters: -

- Continuous Internal Evaluation (CIE).
- Practical / Project Examination
- Semester End Examination.

i. **For Continuous Internal Evaluation (CIE):** Internal assessment will be as follows:

Theory Examination

Credits :4			
Duration: 1Hr/Exam			
Marks:40			
10 Marks Academic Performance	10 Marks Spirit of Collaboration	10 Marks Quiz Submission	10 Marks Class Test
Attendance	Active participation in class activities.	Submission of end module quizzes on regular basis	Minimum 40% marks required to get marks for class test.

ii. **For Practical/Project Examination:** Internal assessment will be as follows:

Practical			Project		
Credits :4		Marks:40	Credits :4		Marks:60
10 marks	20 Marks	10 Marks	20 marks	20 Marks	20 Marks
Attendance	Assignment submission on time	Lab Course Book / Journal	Idea and Originality	Accuracy and reliability	Presentation

iii. **For Semester End Examination:** The Duration of the SEE will be as follows:

For Theory Examination

Credits: 4		Marks: 60	
Duration: 2.5 hrs.			
Q1	Q2	Q3	
10 marks	20 Marks	30 marks	
Short answers (any 5) Each carry 4 marks)	Descriptive (any 2) Each carry 10 marks	Multi choice questions (any 15) Each carry 2 marks	

For Practical/Project Examination

Practical Credits: 4 Marks:60 Duration: 3.5 Hours						Project Credits :4 Marks :60 Duration: 3.5 Hours	
Q1	Q2	Q3	Q4	Q5	Q6	Portfolio	Project Presentation And Design
10 marks	10 marks	10 marks	10 marks	10 marks	10 marks	30 marks	30