UNIVERSITY OF COLOMBO, SRI LANKA

UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING

DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY (EXTERNAL)
Academic Year 2016 – 3rd Year Examination – Semester 5

IT5405: *Fundamentals of Multimedia*
Structured Question Paper

15th May, 2016
(TWO HOURS)

To be completed by the candidate

BIT Examination Index No: ....

Important Instructions:

- The duration of the paper is **2 (two) hours**.
- The medium of instruction and questions is English.
- This paper has **4 questions** and **16 pages**.
- **Answer ALL 4 questions**.
- **Write your answers** in English using the space provided **in this question paper**.
- Do not tear off any part of this answer book.
- Under no circumstances may this book, used or unused, be removed from the Examination Hall by a candidate.
- Note that questions appear on both sides of the paper.
  If a page is not printed, please inform the supervisor immediately.
- **Calculators are NOT allowed.**

Questions Answered

Indicate by a cross (✗), (e.g. ✗) the numbers of the questions answered.

	Question numbers				
To be completed by the candidate by Marking a cross (✗).	1	2	3	4	
To be completed by the examiners:					

1)   (a)(i) The Writer or Scriptwriter plays an essential role in a Multimedia Production team.
List out four of that person's tasks.

(8% Marks)

ANSWER IN THIS BOX
(Any four of the following)
Creating Character, Creating Action, Creating point of view, creating interactivity,
Writing proposals, scripting voice-overs and actors' narrations,
Writing text screens to deliver messages, developing characters designed for an interactive environment,
Gleaning information from experts, synthesizing it and communicating it in a clear and concise manner,
Writing dialogs and narration, Getting involved in the overall design

(ii) Compare and contrast video files and vector animations giving 2 differences.

(6% Marks)

ANSWER IN THIS BOX
(Any 2 of the following)

Video Files	Vector Animations
Need more storage space	Need less storage space
Difficult to scale	Easily scalable
Suitable for storing Filmed Natural Scenes	Suitable for storing Cartoons

(iii) Write down the tools which can be used, one for drawing Bezier curves and the other for drawing 7 pointed stars in Macromedia Flash.

(4% Marks)

ANSWER IN THIS BOX
Bezier Curves – Pen Tool
7 Pointed Stars – Polystar Tool

(iii)   Consider the fonts given in the following list –
New Century Schoolbook, Calibri, Palatino, Bookman, Helvetica, Avant Garde, Optima, Century, Courier New and Verdana.
List these fonts below, as serif and sans serif fonts.

(10% Marks)

ANSWER IN THIS BOX

Serif Fonts	Sans Serif Fonts
New Century Schoolbook, Palatino, Bookman, Century, Courier New	Calibri, Helvetica, Optima, Avant Garde, Verdana

(b) (i) You can add various other media files into Flash to enhance your Multimedia Productions. Briefly write down the steps one would follow to supplement your Flash File with a video.

(25% Marks)

ANSWER IN THIS BOX

Go to File > Import >Import to Library.

Select relevant compatible video file and Click Open button (from the relevant window)

and Navigate the relevant Video Import Wizard.

Drag the Imported video from the Library to the Stage.

(iii)   Macromedia Flash is a very good software for 2-D Animations. Publishing is and activity in Macromedia Flash which you could use to make copies of your production in other file formats. Write three of them in which one could publish a Flash file.

(6% Marks)

ANSWER IN THIS BOX

(Any three of the following)

SWF, HTML, GIF , JPG, PNG, EXE, HQX, MOV

(iv)   A certain colour system used for the web is defined in 16 different values, each of which can be any one figure from 0 to 9 or "a" to "f" (Hexadecimal values). Calculate the total number of colours which this system can produce if its primary colours are Red, Green and Blue.

(15% Marks)

ANSWER IN THIS BOX

Number of figures per hexadecimal value = 16

For Red = 16 x 16 = 256

For Green = 16 x 16 = 256

For Blue = 16 x 16 = 256

Considering all 6 RGB values,

Possible total number of colours = 256 x 256 x 256

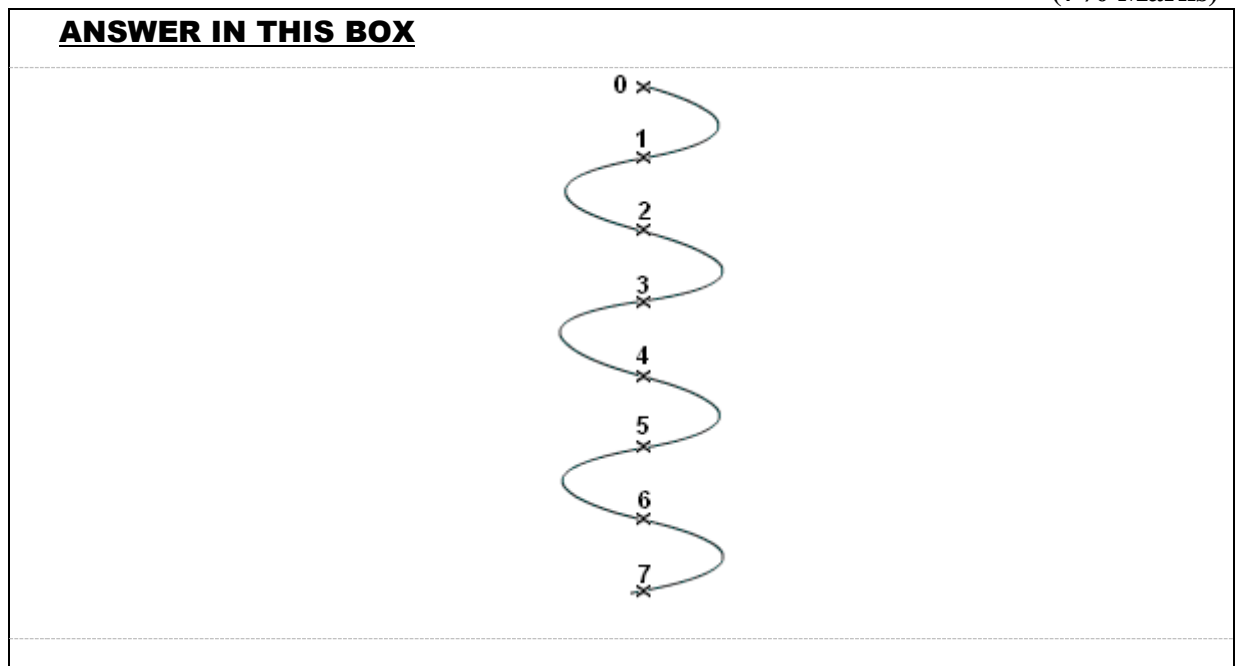= **16, 777, 216 colours (16 million colours)**

(c) (i) Consider these file formats – AVI, MPEG-7, WAV, MIDI, FLV, RA and MPEG-21. Out of these, list out which types are video and which are audio.

(7% Marks)

ANSWER IN THIS BOX	
Video Files	**Audio Files**
MPEG-7	WAV
FLV	RA
MPEG-21	MIDI
AVI	

(ii) The drawing below was done by an Artist using a certain Multimedia Software with only the Pen Tool. The first point of the pen tool is given on the top as 0. Mark with X on the drawing itself the remaining points which would have been used and number them. (Incorrect markings will be given minus marks.)

(7% Marks)

ANSWER IN THIS BOX

(d)   (i) A Video Camera with a resolution of 1280 x 1024 has 1.3 Megapixels. How many
       Megapixels does a camera with a resolution of 1720 x 1400 have?

(6% Marks)

ANSWER IN THIS BOX
1720 x 1400 = 2,408,000 pixels   (2.408 Megapixels)

(ii.) Expand the following giving their full names.

(6% Marks)

ANSWER IN THIS BOX
Codec – Coder / Decoder
ADC – Analog to Digital Converter

2) (a) Symbols are used in Macromedia Flash as an easy way to clone objects. There are 3 different types of those symbols. Name them.

(6% Marks)

ANSWER IN THIS BOX
Movie Clip, Button, Graphic

(b) Macromedia Director is a software which could be used to create animations. Name 5 tools which can be used to directly make shapes on the stage of Macromedia Director

(10% Marks)

ANSWER IN THIS BOX
(Any five of the following)
Filled Round Rectangle, Filled Rectangle, Rectangle, Round Rectangle, Filled Ellipse,
Ellipse.

(c) Macromedia Director is an Animation Software. Inside it, 2-D drawings can be done in 3 windows. Name them.

(9% Marks)

ANSWER IN THIS BOX
Stage, Paint, Vector shape

(d)   In front of each of the features below, write whether it is found in Macromedia Director, Macromedia Flash or in both.

(21% Marks)

> <u>**ANSWER IN THIS BOX**</u>
>
> **Sprite** – Macromedia Director
>
> **Fill Transform Tool** – Macromedia Flash
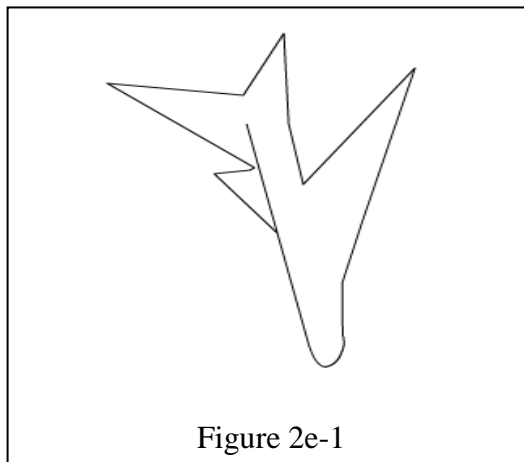>
> **Pen Tool** – Both
>
> **Frames** – Both
>
> **Score** – Macromedia Director
>
> **Action Script** – Macromedia Flash
>
> **Lingo** – Macromedia Director

(e)   In order to produce the drawing given below (in figure 2e-1) using Flash, name the most appropriate tool which you would use.

Figure 2e-1

(6% Marks)

> <u>**ANSWER IN THIS BOX**</u>
>
> **Tool** – Pen tool

(f)   If you were already provided the diagram 2f – 1, concisely outline the steps one would
follow to convert it to the diagram 2f - 2, using a suitable version of Flash.
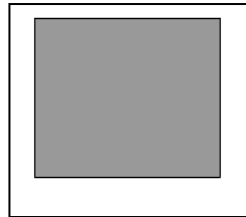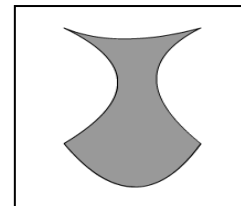
Diagram 2f – 1   Diagram 2f – 2

(20% Marks)
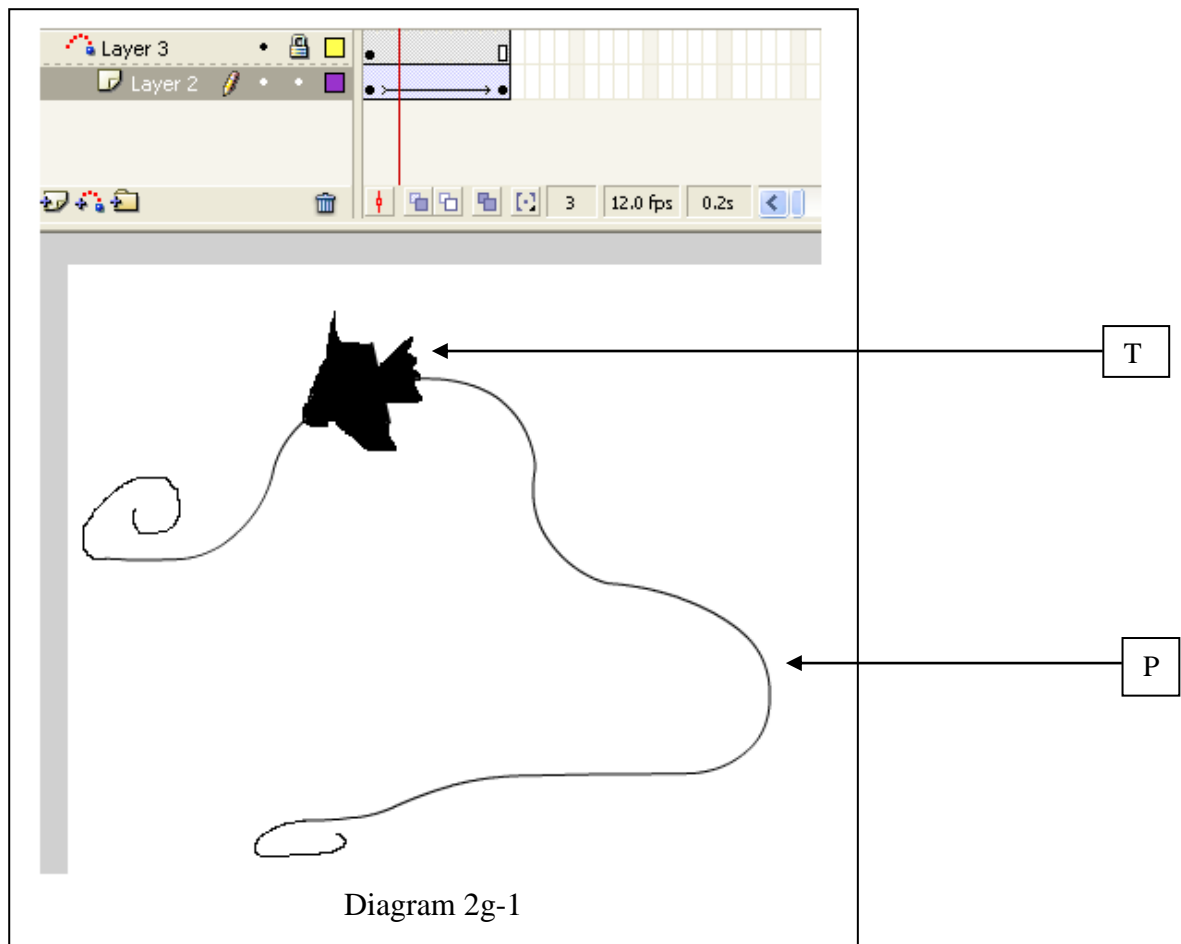
ANSWER IN THIS BOX

Select the Selection Tool.

Select the Left border of the rectangle from its middle and Pull it to the right.

Select the Top border of the rectangle from its middle and Pull it downwards.

Select the Bottom border of the rectangle from its middle and Pull it downwards.

Select the Right border of the rectangle from its middle and Pull it to the left.

In a certain Macromedia Flash (*.fla) file in Diagram 2g-1, the Object (T) should move along the Path (P). Write down the steps one would follow in generating this file.

Diagram 2g-1

(28% Marks)

ANSWER IN THIS BOX

Open a new flash file and Insert two layers.

Draw the object to be moved in the lower layer and its path in the upper layer.

Add keyframes to both those layers, somewhere after the start of the timeline.

Create a motion tween on the layer with the object.

Change the property of the upper layer to Guide.

Change the property of the lower layer to Guided.

Run the file to make sure the object does not deviate from the path.

3)   (a)   Differentiate between the MIDI technology and the Digital Audio technology giving four examples.
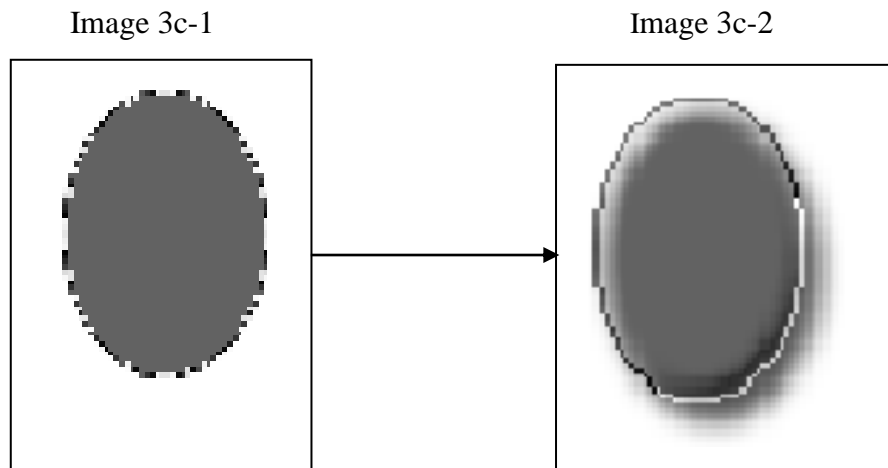
(12% Marks)

ANSWER IN THIS BOX	
MIDI	**Digital Audio**
Recordings of Musical Actions	Representations of Actual Sounds
Device Dependent	Device Independent
Completely editable	Not as editable as MIDI
Small Compact File size	Comparatively Large File size
Poor at supporting spoken dialog	Good at supporting spoken dialog
No consistency in playback quality	Consistent playback quality
(Any four of the above)	

(b)   During design time, some multimedia software may assign different file extensions when compared with their extensions at run-time. Name the extensions of the design time files of each of the software given below.

(10% Marks)

ANSWER IN THIS BOX
Macromedia Flash   :-   .fla
Adobe Photoshop   :-   .psd
Macromedia Director :-   .dir

11

(c)   Adobe Photoshop has certain techniques which allow you to add 3-D like effects to give the impression of buttons and other 3-D objects. Briefly write down the steps you would follow in converting the image 3c-1 to a button-like image 3c-2 shown below, using Adobe Photoshop.

Image 3c-1   Image 3c-2

(30% Marks)

ANSWER IN THIS BOX

Open the image with Adobe Photoshop.

Select the shape (shown in 3c-1).
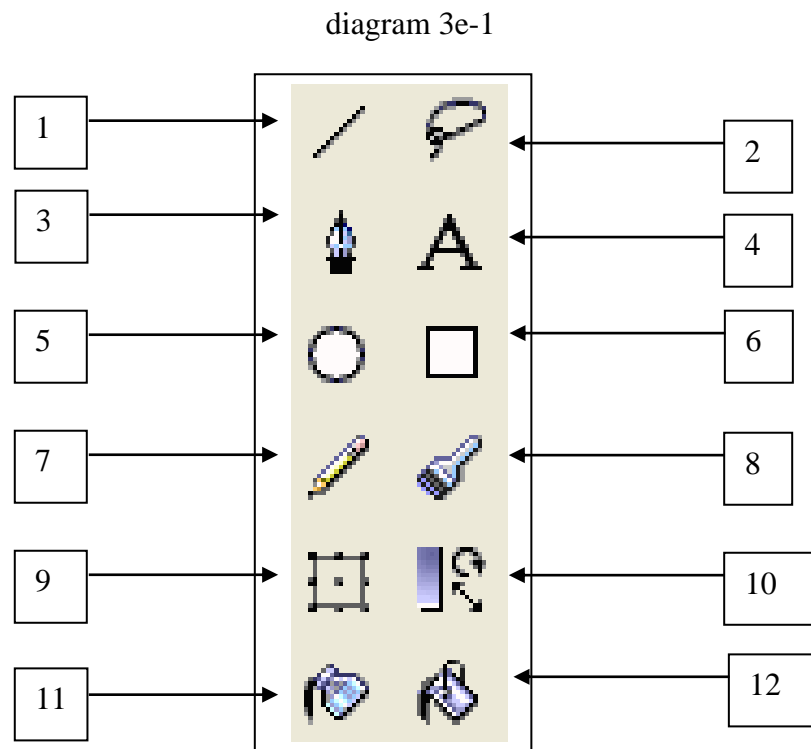
Go to Layer > Layer style > Blending options.

Select Drop Shadow.

Select Inner Glow.

Select Bevel and Emboss.

Press the OK button.

(d)   The diagram below (diagram 3e-1) contains a set of Flash tools which allow you to create extremely interactive, dynamic, rich and beautiful multimedia content. Give the names of those 12 tools against the given numbers.

diagram 3e-1

(20% Marks)

<u>**ANSWER IN THIS BOX**</u>

(1) Line Tool	(7) Pencil Tool
(2) Lasso Tool	(8) Brush Tool
(3) Pen Tool	(9) Free Transform Tool
(4) Text Tool	(10) Fill Transform Tool
(5) Oval Tool	(11) Ink Bottle Tool
(6) Rectangle Tool	(12) Paint Bucket Tool

13

(d) Flash files can be used to create dynamic and interactive animations. Gif files allow a primitive form of animation. Write down the steps you would follow when producing an animated .gif file from a flash .fla file.

(18% Marks)

<u>**ANSWER IN THIS BOX**</u>

Go to File > Publish Settings.

Select the GIF Image (.gif) option.

Click on / select the GIF tab.

Click the Publish button.

Click the OK button.

(f) The following are all file formats able to store images –
JPEG, GIF, BMP, DXF, PICT, IGS and PDF.
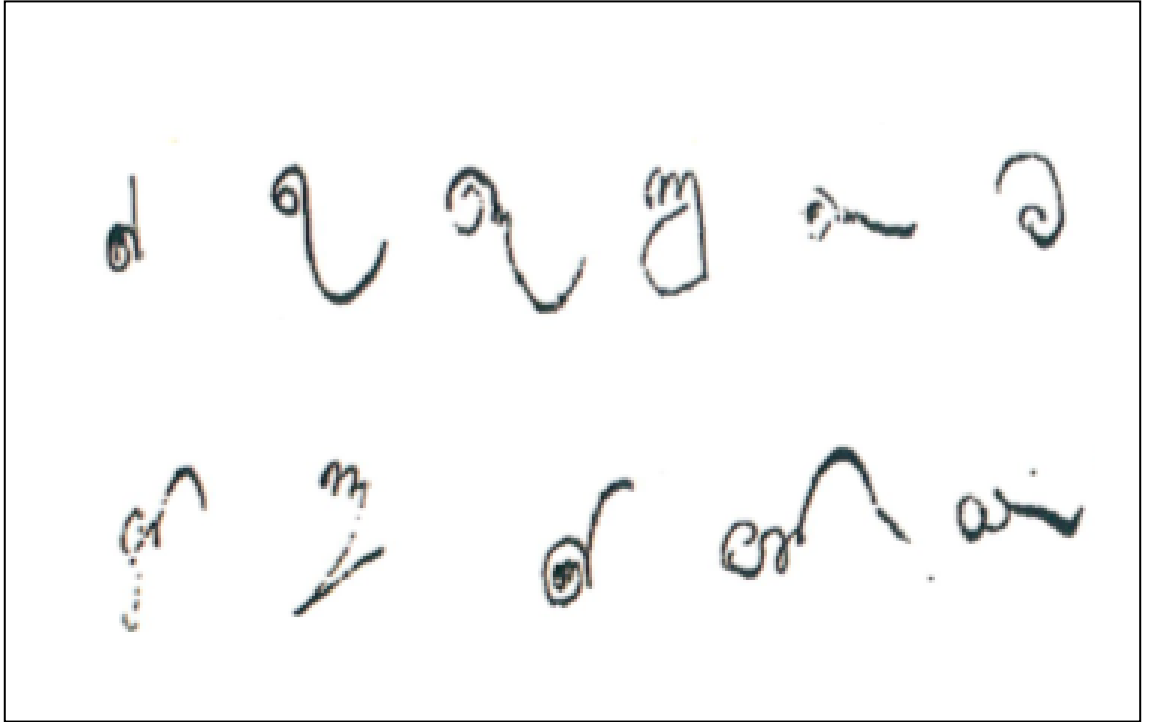Out of them, select those which are cross platform formats with respect to Windows and Macintosh.

(10% Marks)

<u>**ANSWER IN THIS BOX**</u>

JPEG, GIF, DXF, IGS and PDF.

14

4) (a) Draw the first 10 Sinhala Numerals used during the Kandyan Convention of 1815.
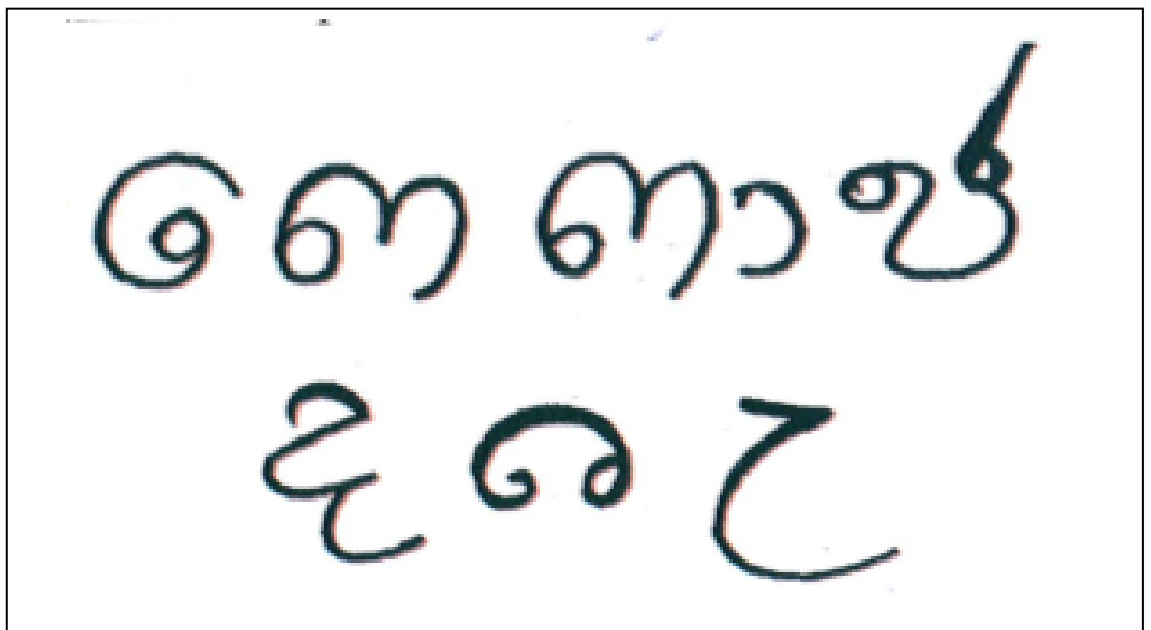
(50% Marks)

(b) Sinhala Numerals and Lith IIlakkkam are two numeral systems traditionally used in Sri Lanka.
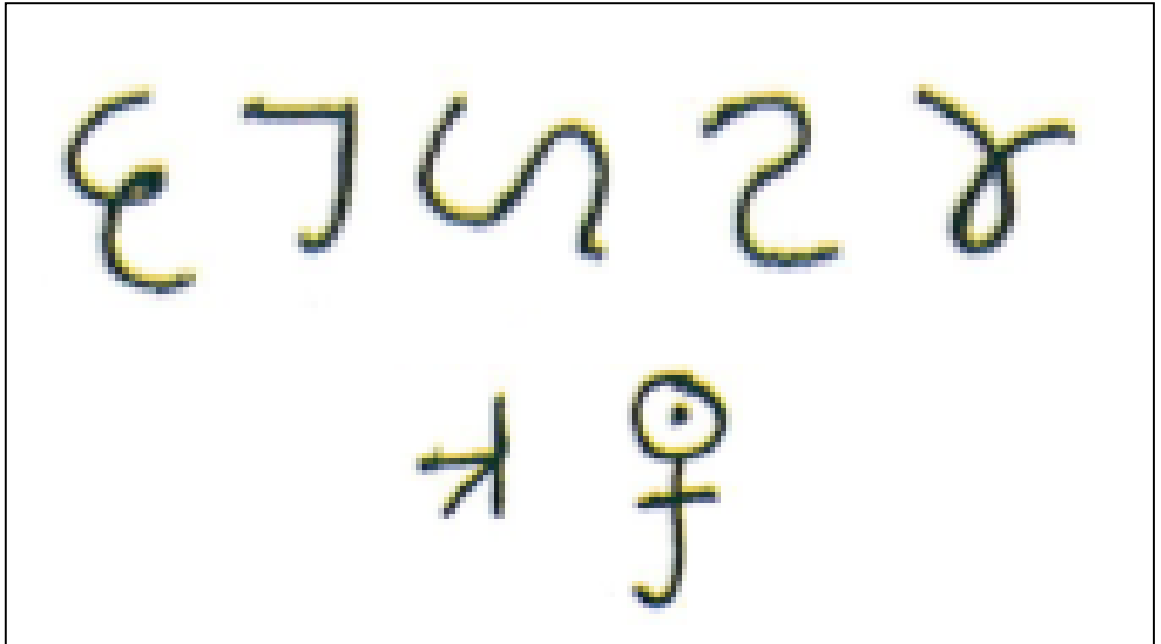   Draw the Lith Illakkam symbols which represent numbers 1 to 7 from Lith Illakkam version 1.

(21% Marks)

(c) Draw the Brahmi Numerals found in Sri Lanka which symbolised 6, 7, 8, 9, 10, 100 and 1000.

(14% Marks)

(d) Draw the 2-D symbols given in the Box in their extruded form, in front of them.

(15% Marks)