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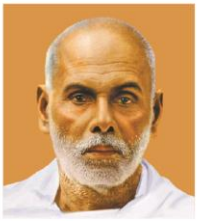

GAP IN THE SYLLABUS AND ACTION TAKEN

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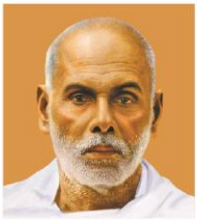

DEPARTMENT OF CIVIL ENGINEERING

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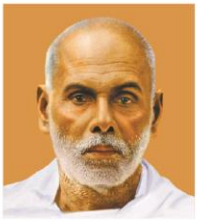

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THEORY

SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF CIVIL ENGINEERING

MECHANICS OF SOLIDS - Gap in the Syllabus

FAILURE OF BEAMS

Failure modes in reinforced concrete beams are classified into two major types: **flexural failure and shear failure**. The former occurs when the imposed load exceeds the flexural capacity of the materials of the beam, while the latter occurs due to deficiency in shear resistance between different materials of the beam.

Flexural Failures

This failure mode occurs when the loads on the beam exceed its flexural capacity. The shear strength of the beam should be greater than its flexural strength otherwise the shear failure would occur before flexural failure. The flexural failure is divided into three types which are discussed below.

1. Flexural Tension Failure

Flexural tension failure initiates by yielding of steel reinforcement followed by crushing of concrete at compression side of the beam. It occurs when the beam is under-reinforced; the reinforcement ratio in the beam is low than balanced reinforced ratio as per ACI 318-14.The signs of this type of failure are the development of cracks at the tension side of the beam which further extend to the compression side. These cracks are mostly vertical and located at the middle third of the beam. Great deflection is another sign of flexural tension failure.

In summary, the flexural tension failure happens gradually i.e. ductile failure and it is desired failure type in beam design process.

Fig. 1: Flexural Failure in Beam

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2. Flexural Compression Failure

The flexural compression failure begins by crushing of concrete at compression side followed by yielding of steel at tension side of the beam. It occurs when the beam is over-reinforced which means the beam reinforcement ratio is greater than balanced reinforcement ratio as per ACI 318-14.This type of failure is sudden and does not provide warning i.e. brittle failure. That is why it is not desired from reinforced concrete design point of view.

This type of failure can be prevented by avoiding over-reinforced concrete beam design or increasing compression strength of concrete by introducing steel reinforcement at the compression side or increasing the geometry of the beam.

Fig. 2: Flexural Compression Failure

3. Balanced Failure

It is a type of failure in which concrete crushes and steel yields simultaneously. It occurs when the amount of steel in the beam is equal to balanced reinforcement ratio as per ACI 318-14.

Shear Failure Modes

Shear failure occurs when the beam has shear resistance lower than flexural strength and the shear force exceeds the shear capacity of different materials of the beam. A shear load is a force that tends to produce a sliding failure on a material along a plane that is parallel to the direction of the force.

This type of failure is sudden and provides no warning i.e. brittle failure. The effective span to depth ratio of the beams and its size are important parameters in determining the type of shear failure.

1. Diagonal Tension Failure

Diagonal tension failure begins with the development of vertical crack (flexural cracks) at the bottom of the beam due to flexural tensile stress. Then, as the load on the beam increases, this crack growth both in width and length and bends in a diagonal direction as it moves to the upper part of the beam toward the loading point. After that, the last stage of shear tension failure occurs which is a sudden failure of concrete in shear.

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This mode of failure is common in beams with low or no web reinforcement. Diagonal tension failure occurs typically in beams with a shear-span to depth ratio (a/d) greater than 2, but could occur also for lower values of a/d.

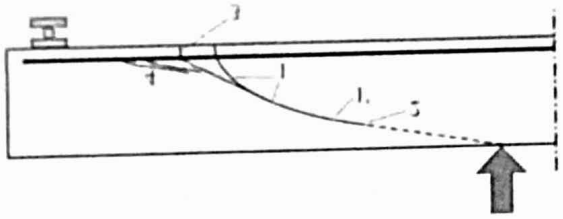

Fig. 3: Diagonal Tension Crack Development

2. Shear Compression Failure

Shear compression failure begins by initiation and development of cracks in the beam cross-section. Then, these cracks propagate and penetrate the compression zone of the beam, and the final stage of the failure occurs when the compressive strength of the concrete is exceeded.

The crushing of concrete takes place at the tip of the diagonal crack in the area around the point of load application. Fig. 4 illustrates the development of cracks at the location of shear compression failure in a beam.

Shear compression failure is mainly related to high amount of shear reinforcement. Finally, shear compression failure can occur in beams with span to depth ratio of less than four.

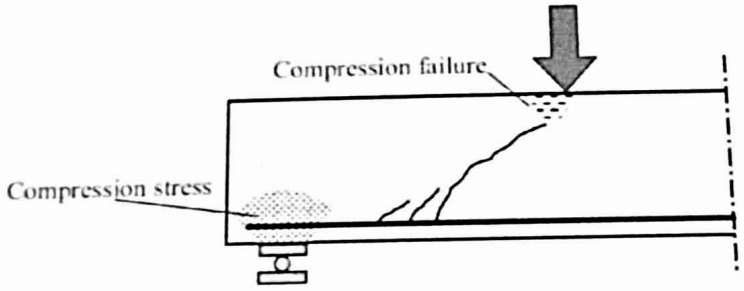

Fig. 4: Shear Compression Failure of a Beam

3. Splitting Shear (True Shear) Failure

When the shear span to depth ratio of a beam is less than one, splitting shear failure can be expected. Commonly, this type of beam is called deep beam in which loads are directly transferred to supports, and shear strength is much higher than in ordinary flexural beams.

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Sometimes, failure in compression of the region adjacent the supports may occur instead of splitting shear failure.

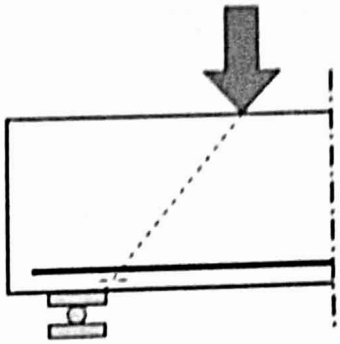

Fig. 5: True Shear Failure or Splitting Shear Failure

4. Anchorage failure

Anchorage failure is the splitting of concrete along the longitudinal reinforcement (before compression failure can occur) due to small diagonal cracks. It occurs when the main reinforcement is not adequately anchored beyond the crack.

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DEPARTMENT OF CIVIL ENGINEERING

MECHANICS OF SOLIDS

Q - Flexural shear failure in a reinforced concrete beam :

A. occurs under large bending moment and less shear force

B. results in cracks which are normally at 90 degree with the horizontal

C. both (a) and (b)

D. none of these

Q - ..... type of failure is sudden and does not provide warning

A. Flexural Tension Failure

B. Flexural Compression Failure

C. Balanced Failure

D. None of these

Q - The flexural failures are

i Flexural Tension Failure

ii Flexural Compression Failure

iii Anchorage failure

A. i only

B. ii only

C. both i and ii

D. i, ii and iii

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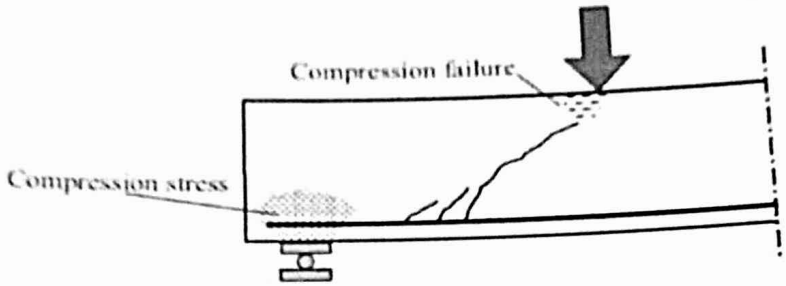
Q – The figure shown below is an example of .....



A. Shear Compression Failure

B. Splitting Shear Failure

C. Flexural Tension Failure

D. Flexural Compression Failure

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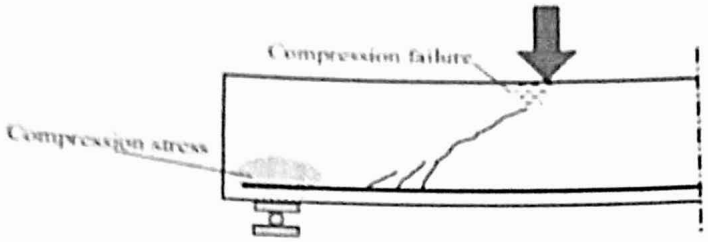

A. Shear Compression Failure

B. Splitting Shear Failure

C. Flexural Tension Failure

D. Flexural Compression Failure

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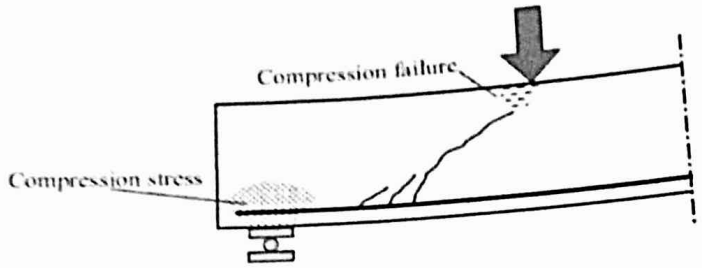

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ASSESSMENT FOR GAP IN THE SYLLUBUS

No.	NAME	Q1	Q2	Q3	Q4	TOTAL MARK
1	ADITHYA K SURESAN	1	0	1	1	3
2	ARJUN MUKUNDAN	1	1	0	0	2
3	ARSHAD K P	1	1	0	1	3
4	ASLAHA B	1	0	1	0	2
5	BASILA K.V	1	0	1	1	3
6	DHANUSH GOPINATH	1	1	0	0	2
7	FATHIMATHUL NAFIYA K	0	1	1	0	2
8	FATHIMATHUL SHAHANA K V	0	0	1	1	2
9	HARSHITH SAJITH	1	0	1	1	3
10	NANDANA K	1	1	1	1	4
11	NEEHARA SAJITH	1	0	1	1	3
12	NUHA NIZAR	1	0	1	1	3
13	SANOOP MANOJ M	1	1	0	0	2
14	VISHNU SUDHEER	1	0	1	1	3

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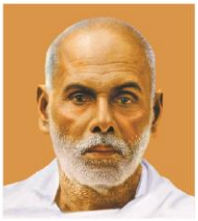

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LAB

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COURSE DELIVERY DETAILS FOR GAPS IN THE SYLLABUS

Sl no.	DATE	TOPICS	TYPE OF DELIVERY (Seminar, workshop, online/offline class etc)	MODE OF ASSESMENT (Quiz, Viva etc)
1	20/12/22	Preparation of liquid medium	offline class	Quize

HOD

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PREPARATION OF LIQUID MEDIUM (BROTH)

REAGENTS

- HCl 1N
- NaOH 1N
- Distilled water.
- NUTRIENT MEDIUM
- Peptone 5.0 g
- Beef extract 3.0 g
- Distilled water 1L (pH 7)

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APPARATUS

- Autoclave
- Heater
- Culture tubes
- Glass rod
- Beaker(1 L capacity)
- Measuring cylinder
- pH meter

PROCEDURE

- Accurately weigh the chemical ingredients of the nutrient broth transfer them into a beaker containing 500 ml distilled water.
- Gently heat the contents with slight agitation to dissolve ingredients.
- Add more distilled water into make the volume 1L.
- Measure pH of the broth by using a pH meter and adjust the pH by adding drops of either HCl or NaOH solution.
- Dispense 10ml broth to each culture tube.

- Prepare cotton plugs and apply them into the mouth of broth tubes
- Tightly cover the mouth of the cotton plugs by aluminium foil or p and tie with a rubber band or thread.
- Transfer all the broth tubes into a test stand or iron basket
- Place the basket inside the autoclave / pressure cooker and steriliz 1210 C for 30 minutes.
- When temperature cools down take out the broth tubes.
- Use the broth tube when required or store at room temperature further use

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DEPARTMENT OF CIVIL ENGINEERING

CEL411 ENVIRONMENTAL ENGINEERING LAB

Questions based on Preparation of Liquid Medium

3/5

1. Which of the following is used as a nutrient medium
   a) Peptone 5.0 g,Beef extract 3.0 g
   b) Peptone 5.0 g,nutrient agar powder
   c) Beef extract 3.0 g, tryptic soy broth
   d) Peptone 1.0 g,Beef extract 2.0 g
2. Which of the following is a rich source of B vitamins
   a) Peptone
   b) Yeast extract
   c) Beef extract
   d) Agar
3. Which of the following instrument is used for sterilizing media after it has been prepared
   a) Autoclave
   b) Laminar air flow chamber
   c) Inoclum needle
   d) Incubator
4. Colony formation can be observed in liquid media broth
   a) True
   b) False
5. Which of the following bacteria requires nicotinic acid as a growth factor in their media
   a) Proteus vulgaris
   b) Nitrosomonas
   c) e. coli
   d) leuconostoc mesenteroides

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ATTENDENCE SHEET

SAMPLING OF OXIDES OF NITROGEN

Roll No.	Register Number	Name of Student	Signature
1	SNC19CE001	AADITHYA KRISHNAN.C	
2	SNC19CE002	ABHIRAMY RAJ	
3	SNC19CE003	AKASH.P.V	
4	SNC19CE004	ANANDHU ASHOK K P	
5	SNC19CE005	ANANJANA.C	
6	SNC19CE006	ANJALI MP	
7	SNC19CE007	ANJANA.C	
8	SNC19CE008	ASHAYA RAMESH	
9	SNC19CE009	ASWITHA GANGADHARAN	
10	SNC19CE010	ATHIRA ARUN K	
11	SNC19CE011	AYSHATH SAIFA	
12	SNC19CE012	KRISHNA PRASAD S L	
13	SNC19CE013	MUHAMMED HANNAN	
14	SNC19CE014	MUHAMMED RUFAID M	
15	SNC19CE015	NIKHIL SAI.K	
16	SNC19CE016	PRANAV.A.K	

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17	SNC19CE017	PRAYAG PRABHAKARAN	
18	SNC19CE018	SACHIN SURENDRAN.M	
19	SNC19CE019	SHAMSHAD.P.V	
20	SNC19CE020	SILNA.M	
21	LSNC19CE021	SREEHARI K K	

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ASSESMENT FOR GAP IN SYLLABUS

R.No	NAME	Q1	Q2	Q3	Q4	Q5	TOTAL MARK
1	AADITHYA KRISHNAN.C	1	0	0	1	1	3
2	ABHIRAMY RAJ	0	0	1	1	1	3
3	AKASH.P.V	1	1	0	0	1	3
4	ANANDHU ASHOK KP	1	1	0	0	0	2
5	ANANJANA.C	1	0	1	1	0	3
6	ANJALI MP	1	1	0	1	1	4
7	ANJANA.C	1	1	1	0	1	4
8	ASHAYA RAMESH	1	1	1	1	1	5
9	ASWITHA GANGADHARAN	1	1	1	1	1	5
10	ATHIRA ARUN K	1	0	0	1	1	3
11	AYSHATH SAIFA	1	1	0	0	0	2
12	KRISHNA PRASAD S L	1	1	0	0	0	2
13	MUHAMMED HANNAN	1	0	0	0	0	1
14	MUHAMMED RUFAID M	0	0	0	0	0	0
15	NIKHIL SAI.K	0	1	1	0	0	2
16	PRANAV.A.K	1	0	0	1	0	2
17	PRAYAG PRABHAKARAN	0	0	1	0	1	2

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18	SACHIN SURENDRAN.M	0	0	1	0	1	2
19	SHAMSHAD.P.V	1	1	0	0	0	2
20	SILNA.M	1	1	0	1	1	4
21	SREEHARI K K	1	1	1	1	0	4

[HOD]

[PRINCIPAL]

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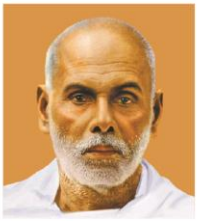

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

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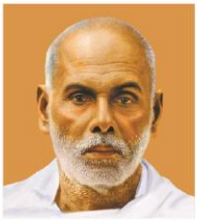
CHALAKKODE P.O., KOROM, PAYYANUR, KANNUR-670 307



Est. 2003

THEORY

SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CST 205 OBJECT ORIENTED PROGRAMMING USING JAVA

GAP IN THE SYLLABUS – HTML

Mode of Execution: Study Materials Given

SL.NO:	REGISTER NO	NAME	SIGNATURE
1	SNC21CS001	ABHINAV DHARMARAJ	Absent
2	SNC21CS002	ABHINAV K	
3	SNC21CS003	ABHINAV K	Absent
4	SNC21CS004	ABHISREE ASHOKAN	Absent
5	SNC21CS005	ABIRAM SUNIL	
6	SNC21CS006	ADARSH CHANDRAN K V	Absent
7	SNC21CS007	ADARSH KV	
8	SNC21CS008	ADHITHYA JITHESH	
9	SNC21CS009	ADWAITH S NIRANJ	
10	SNC21CS010	AKSHAY P K	Absent
11	SNC21CS011	AMINA FIZA K V	
12	SNC21CS012	ANUDEEP K	
13	SNC21CS013	ANUPAM K V	Absent
14	SNC21CS014	ARATHI T V	Absent
15	SNC21CS015	ARJUN P P	Absent
16	SNC21CS016	ARJUN K V	
17	SNC21CS017	ASWATHI A V	Absent
18	SNC21CS018	ASWATHI K V	Absent
19	SNC21CS019	ATHIRA K V	
20	SNC21CS020	ATHUL PAVITHRAN	
21	SNC21CS021	B SREYAS KRISHNAN	
22	SNC21CS022	FADI ASLAM P V	
23	SNC21CS023	FATHIMATH THANSEEHA	
24	SNC21CS024	HAIFA C	

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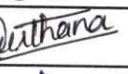
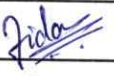
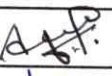
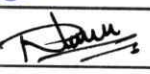
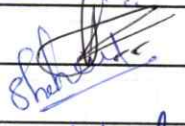
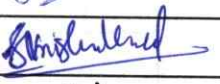
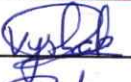
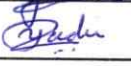
25	SNC21CS025	HIBA T K	
26	SNC21CS027	JERLITT VISAL	
27	SNC21CS028	JISHNU K R	
28	SNC21CS029	KEERTHANA K	
29	SNC21CS030	M MOHAMMED FIDAN	
30	SNC21CS031	MOHAMMED ZAHRAN P V	
31	SNC21CS032	MUHAMMED ADNAN E M	
32	SNC21CS033	MOHAMMED AMEN NAJEEB	
33	SNC21CS034	MUHAMMED SHEHZAD SIDHIK	Absent
34	SNC21CS035	MUHAMMED THAJUDHEEN	
35	SNC21CS036	NANDANA M	
36	SNC21CS037	NAVYA P	
37	SNC21CS038	NEERAJ RAVI P V	
38	SNC21CS040	RAIHANA T P	
39	SNC21CS041	SARANG V	
40	SNC21CS042	SHAHEEM A V	
41	SNC21CS043	SREYAS KRISHNAN	
42	SNC21CS044	UTHARA M V	
43	SNC21CS045	VAISHNAV K P	
44	SNC21CS046	VISHAK K R	
45	SNC21CS047	VISHAL V V	Absent
46	SNC21CS048	VYSHAK UMESHAN	
47	SNC21CS049	YADUKRISHNAN K V	

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CST 205 OBJECT ORIENTED PROGRAMMING IN JAVA

GAP IN THE SYLLABUS – HTML

HTML stands for Hypertext Markup Language, and it is the most widely used language to write Web Pages.

- **Hypertext** refers to the way in which Web pages (HTML documents) are linked together. Thus, the link available on a webpage is called Hypertext.
- As its name suggests, HTML is a **Markup Language** which means you use HTML to simply "mark-up" a text document with tags that tell a Web browser how to structureit to display.

Originally, HTML was developed with the intent of defining the structure of documents like headings, paragraphs, lists, and so forth to facilitate the sharing of scientific information between researchers.

Now, HTML is being widely used to format web pages with the help of different tags availablein HTML language.

BasicHTMLDocument

In its simplest form, following is an example of an HTML document:

```
<!DOCTYPE html>
<html>
<head>
<title>This is document title</title>
</head>
<body>
<h1>This is a heading</h1>
<p>Document content goes here .... </p>
</body>
</html>
```

Either you can use **Try it** option available at the top right corner of the code box to check theresult of this HTML code, or let's save it in an HTML file **test.htm** using your favorite text editor. Finally open it using a web browser like Internet Explorer or Google Chrome, or Firefox etc. It must show the following output:

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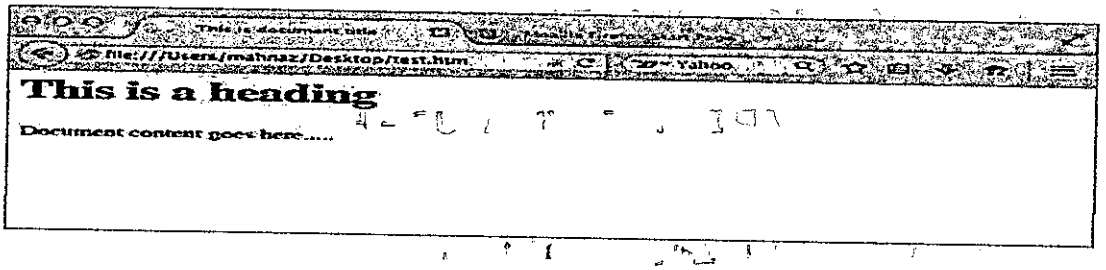

HTMLTags

As told earlier, HTML is a markup language and makes use of various tags to format the content. These tags are enclosed within angle braces **<Tag Name>**. Except few tags, most of the tags have their corresponding closing tags. For example, **<html>** has its closing tag**</html>** and **<body>** tag has its closing tag **</body>** tag etc.

Above example of HTML document uses the following tags:

Tag	Description
<!DOCTYPE...>	This tag defines the document type and HTML version.
<html>	This tag encloses the complete HTML document and mainly comprisesof document header which is represented by <head>...</head> and document body which is represented by <body>...</body> tags.
<head>	This tag represents the document's header which can keep other HTMLtags like <title>, <link> etc.
<title>	The <title> tag is used inside the <head> tag to mention the document title.
<body>	This tag represents the document's body which keeps other HTML tagslike <h1>, , <p> etc.
<h1>	This tag represents the heading.
<p>	This tag represents a paragraph.

HTMLDocumentStructure

A typical HTML document will have the following structure:

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```
Document declaration tag
<html>
   <head>
      Document header related tags
   </head>

   <body>
      Document body related tags
   </body>
</html>
```

The<!DOCTYPE>Declaration

The <!DOCTYPE> declaration tag is used by the web browser to understand the version of the HTML used in the document. Current version of HTML is 5 and it makes use of the following declaration:

```
<!DOCTYPE html>
```

There are many other declaration types which can be used in HTML document depending on what version of HTML is being used. We will see more details on this while discussing <!DOCTYPE...> tag along with other HTML tags.

HeadingTags

Any document starts with a heading. You can use different sizes for your headings. HTML alsohas six levels of headings, which use the elements **<h1>, <h2>, <h3>, <h4>, <h5>, and <h6>**. While displaying any heading, browser adds one line before and one line after that heading.

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Example

```
<!DOCTYPE html>
<html>
<head>
<title>Paragraph Example</title>
</head>
<body>
<p>Here is a first paragraph of text.</p>
<p>Here is a second paragraph of text.</p>
<p>Here is a third paragraph of text.</p>
</body>
</html>
```

This will produce the following result:

```
Here is a first paragraph of text.
Here is a second paragraph of text.
Here is a third paragraph of text.
```

LineBreakTag

Whenever you use the **
** element, anything following it starts from the next line. This tag is an example of an **empty** element, where you do not need opening and closing tags, as there is nothing to go in between them.

The <br /> tag has a space between the characters **br** and the forward slash. If you omit thisspace, older browsers will have trouble rendering the line break, while if you miss the forward slash character and just use <br> it is not valid in XHTML.

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Line Break  Example</title>
</head>
<body>
<p>Hello<br />
You delivered your assignment on time.<br />
Thanks<br />
Mahnaz</p>
</body>
</html>
```

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Example

```
<!DOCTYPE html>
<html>
<head>
<title>Horizontal Line Example</title>
</head>
<body>
<p>This is paragraph one and should be on top</p>
<hr />
<p>This is paragraph two and should be at bottom</p>
</body>
</html>
```

This will produce the following result:
This is paragraph one and should be on top
This is paragraph two and should be at bottom

Again **<hr />** tag is an example of the **empty** element, where you do not need opening andclosing tags, as there is nothing to go in between them.

The **<hr />** element has a space between the characters **hr** and the forward slash. If you omit this space, older browsers will have trouble rendering the horizontal line, while if you miss the forward slash character and just use **<hr>** it is not valid in XHTML

PreserveFormatting

Sometimes, you want your text to follow the exact format of how it is written in the HTML document. In these cases, you can use the preformatted tag **<pre>**.

Any text between the opening **<pre>** tag and the closing **</pre>** tag will preserve the formatting of the source document.

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Example

```
<!DOCTYPE html>
<html>
<head>
<title>Nonbreaking Spaces Example</title>
</head>
<body>
<p>An example of this technique appears in the movie "12 Angry Men."</p>
</body>
</html>
```

An **HTML element** is defined by a starting tag. If the element contains other content, it endswith a closing tag, where the element name is preceded by a forward slash as shown below with few tags:

Start Tag	Content	End Tag
	This is paragraph content.	
<h1>	This is heading content.	</h1>
	This is division content.	

So here ** .... ** is an HTML element, **<h1>...</h1>** is another HTML element. There are some HTML elements which don't need to be closed, such as **<img.../>**, **<hr />** and **
** elements. These are known as **void elements**.

HTML documents consists of a tree of these elements and they specify how HTML documents should be built, and what kind of content should be placed in what part of an HTML document.

HTML Tags vs Element

An HTML element is defined by a *starting tag*. If the element contains other content, it ends with a *closing tag*.

For example, ** ** is starting tag of a paragraph and ** ** is closing tag of the same paragraph but ** This is paragraph ** is a paragraph element.

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Example

```
<!DOCTYPE html>
<html>
<head>
<title>Align Attribute  Example</title>
</head>
<body>
<p align="left">This is left aligned</p>
<p align="center">This is center aligned</p>
<p align="right">This is right aligned</p>
</body>
</html>
```

This will display the following result:

This is left aligned

This is center aligned

This is right aligned

CoreAttributes

The four core attributes that can be used on the majority of HTML elements (although not all)are:

- Id
- Title
- Class
- Style

The IdAttribute

The **id** attribute of an HTML tag can be used to uniquely identify any element within an HTML page. There are two primary reasons that you might want to use an id attribute on an element:

- If an element carries an id attribute as a unique identifier, it is possible to identify justthat element and its content.

- If you have two elements of the same name within a Web page (or style sheet), youcan use the id attribute to distinguish between elements that have the same name.

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```
class="className1 className2 className3"
```

ThestyleAttribute

The style attribute allows you to specify Cascading Style Sheet (CSS) rules within the element.

```
<!DOCTYPE html>
<html>
<head>
<title>The style Attribute</title>
</head>
<body>
<p style="font-family:arial; color:#FF0000;">Some text...</p>
</body>
</html>
```

This will produce the following result:

```
Some text...
```

At this point of time, we are not learning CSS, so just let's proceed without bothering much about CSS. Here, you need to understand what are HTML attributes and how they can be used while formatting content.

InternationalizationAttributes

There are three internationalization attributes, which are available for most (although not all) XHTML elements.

- dir
- lang
- xml:lang

ThedirAttribute

The **dir** attribute allows you to indicate to the browser about the direction in which the text should flow. The dir attribute can take one of two values, as you can see in the table that follows:

Value	Meaning

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The xml:lang Attribute

The *xml:lang* attribute is the XHTML replacement for the *lang* attribute. The value of the *xml:lang* attribute should be an ISO-639 country code as mentioned in previous section.

Generic Attributes

Here's a table of some other attributes that are readily usable with many of the HTML tags.

Attribute	Options	Function
align	right, left, center	Horizontally aligns tags
valign	top, middle, bottom	Vertically aligns tags within an HTMLelement.
bgcolor	numeric, hexidecimal, RGB values	Places a background color behind an element
background	URL	Places a background image behind an element
id	User Defined	Names an element for use with Cascading Style Sheets.
class	User Defined	Classifies an element for use with Cascading Style Sheets.
width	Numeric Value	Specifies the width of tables, images, or table cells.
height	Numeric Value	Specifies the height of tables, images, or table cells.
title	User Defined	"Pop-up" title of the elements.

HTML Tags and related attributes please check reference to **HTML Tags List**.

Bold Text

Anything that appears within **...** element, is displayed in bold as shown below:

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Anything that appears within **<u>...</u>** element, is displayed with underline as shownbelow:

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Underlined Text Example</title>
</head>
<body>
<p>The following word uses a <u>underlined</u> typeface.</p>
</body>
</html>
```

This will produce the following result:

The following word uses an underlined typeface.

StrikeText

Anything that appears within **<strike>...</strike>** element is displayed with strikethrough,which is a thin line through the text as shown below:

Example

```
<!DOCTYPE html>
<html>
<head>
```

```
<title>Strike Text Example</title>
</head>
<body>
<p>The following word uses a <strike>strikethrough</strike> typeface.</p>
</body>
</html>
```

This will produce the following result:

The following word uses a ~~strikethrough~~ typeface.

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```
The following word uses a superscript typeface.
```

SubscriptText

The content of a **_{...}** element is written in subscript; the font size used is the same as the characters surrounding it, but is displayed half a character's height beneath the other characters.

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Subscript Text Example</title>
</head>
<body>
<p>The following word uses a <sub>subscript</sub> typeface.</p>
</body>
</html>
```

This will produce the following result:

The following word uses a subscript typeface.

InsertedText

Anything that appears within **<ins>...</ins>** element is displayed as inserted text.

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Inserted Text Example</title>
</head>
<body>
<p>I want to drink <del>cola</del> <ins>wine</ins></p>
</body>
</html>
```

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This will produce the following result:

```
The following word uses a big typeface.
```

SmallerText

The content of the **<small>...</small>** element is displayed one font size smaller than therest of the text surrounding it as shown below:

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Smaller Text Example</title>
</head>
<body>
<p>The following word uses a <small>small</small> typeface.</p>
</body>
</html>
```

This will produce the following result:

```
The following word uses a small typeface.
```

GroupingContent

The ** ** and **** elements allow you to group together several elements to create sections or subsections of a page.

For example, you might want to put all of the footnotes on a page within a element to indicate that all of the elements within that element relate to the footnotes. You mightthen attach a style to this element so that they appear using a special set of style rules.

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This is the example of span tag and the div tag along with CSS

These tags are commonly used with CSS to allow you to attach a style to a section of a page.

The phrase tags have been desicolgned for specific purposes, though they are displayed in a similar way as other basic tags like **<b>**, **<i>**, **<pre>**, and **<tt>**, you have seen in previouschapter. This chapter will take you through all the important phrase tags, so let's start seeingthem one by one.

EmphasizedText

Anything that appears within **...** element is displayed as emphasized text.

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Emphasized Text Example</title>
</head>
<body>
<p>The following word uses a <em>emphasized</em> typeface.</p>
</body>
</html>
```

This will produce the following result:

The following word uses an *emphasized* typeface.

MarkedText

Anything that appears with-in **<mark>...</mark>** element, is displayed as marked withyellow ink.

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Marked Text Example</title>
```

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```
<title>Text Abbreviation</title>
</head>
<body>
<p>My best friend's name is  <abbr title="Abhishek">Abhy</abbr>.</p>
</body>
</html>
```

This will produce the following result:

My best friend's name is Abhy.

Acronym Element

The **<acronym>** element allows you to indicate that the text between <acronym> and </acronym> tags is an acronym.

At present, the major browsers do not change the appearance of the content of the <acronym> element.

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Acronym Example</title>
</head>
<body>
<p>This chapter covers marking up text in <acronym>XHTML</acronym>.</p>
</body>
</html>
```

This will produce the following result:

This chapter covers marking up text in XHTML.

Text Direction

The **<bdo>...</bdo>** element stands for Bi-Directional Override and it is used to overridethe current text direction.

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The following word is a *special* term.

QuotingText

When you want to quote a passage from another source, you should put it in between**<blockquote>...</blockquote>** tags.

Text inside a <blockquote> element is usually indented from the left and right edges of the surrounding text, and sometimes uses an italicized font.

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Blockquote Example</title>
</head>
<body>
<p>The following description of XHTML is taken from the W3C Web site:</p>

<blockquote>XHTML 1.0 is the W3C's first Recommendation for XHTML, following on
from earlier work on HTML 4.01, HTML 4.0, HTML 3.2 and HTML 2.0.</blockquote>
</body>
</html>
```

This will produce the following result:

The following description of XHTML is taken from the W3C Web site:

> XHTML 1.0 is the W3C's first Recommendation for XHTML, following on from earlier work on HTML 4.01, HTML 4.0, HTML 3.2 and HTML 2.0.

ShortQuotations

The **<q>...</q>** element is used when you want to add a double quote within a sentence.

Example

```
<!DOCTYPE html>
<html>
<head>
```

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Example

```
<!DOCTYPE html>
<html>
<head>
<title>Computer Code Example</title>
</head>
<body>
<p>Regular text. <code>This is code.</code> Regular text.</p>
</body>
</html>
```

This will produce the following result:

Regular text. This is code. Regular text.

KeyboardText

When you are talking about computers, if you want to tell a reader to enter some text, you can use the **<kbd>...</kbd>** element to indicate what should be typed in, as in this example.

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Keyboard Text Example</title>
</head>
<body>
<p>Regular text. <kbd>This is inside kbd element</kbd> Regular text.</p>
</body>
</html>
```

This will produce the following result:

Regular text. This is inside kbd elementRegular text.

ProgrammingVariables

This element is usually used in conjunction with the **<pre>** and **<code>** elements to indicatethat the content of that element is a variable.

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Example

```
<!DOCTYPE html>
<html>
<head>
<title>Address Example</title>
</head>
<body>
<address>388A, Road No 22, Jubilee Hills -  Hyderabad</address>
</body>
</html>
```

This will produce the following result:

388A, Road No 22, Jubilee Hills – Hyderabad

HTML lets you specify metadata - additional important information about a document in a variety of ways. The META elements can be used to include name/value pairs describing properties of the HTML document, such as author, expiry date, a list of keywords, document author etc.

The **<meta>** tag is used to provide such additional information. This tag is an empty elementand so does not have a closing tag but it carries information within its attributes.

You can include one or more meta tags in your document based on what information you want to keep in your document but in general, meta tags do not impact physical appearance of the document so from appearance point of view, it does not matter if you include them ornot.

AddingMetaTagstoYourDocuments

You can add metadata to your web pages by placing <meta> tags inside the header of the document which is represented by **<head>** and **</head>** tags. A meta tag can have following attributes in addition to core attributes:

Attribute	Description
Name	Name for the property. Can be anything. Examples include, keywords, description, author, revised, generator etc.
content	Specifies the property's value.

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Example

```
<!DOCTYPE html>
<html>
<head>
<title>Meta Tags Example</title>
<meta name="keywords" content="HTML, Meta Tags, Metadata" />
<meta name="description" content="Learning about Meta Tags." />
</head>
<body>
<p>Hello HTML5!</p>
</body>
</html>
```

Document Revision Date

You can use <meta> tag to give information about when last time the document was updated. This information can be used by various web browsers while refreshing your webpage.

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Meta Tags Example</title>
<meta name="keywords" content="HTML, Meta Tags, Metadata" />
<meta name="description" content="Learning about Meta Tags." />
<meta name="revised" content="Tutorialspoint, 3/7/2014" />
</head>
<body>
<p>Hello HTML5!</p>
</body>
</html>
```

Document Refreshing

A <meta> tag can be used to specify a duration after which your web page will keep refreshing

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```
<!DOCTYPE html>
<html>
<head>
<title>Meta Tags Example</title>
<meta name="keywords" content="HTML, Meta Tags, Metadata" />
<meta name="description" content="Learning about Meta Tags." />
<meta name="revised" content="Tutorialspoint, 3/7/2014" />
<meta http-equiv="refresh" content="5; url=http://www.tutorialspoint.com" />
</head>
<body>
<p>Hello HTML5!</p>
</body>
</html>
```

SettingCookies

Cookies are data, stored in small text files on your computer and it is exchanged between web browser and web server to keep track of various information based on your web application need.

You can use <meta> tag to store cookies on client side and later this information can be usedby the Web Server to track a site visitor.

Example

Following is an example of redirecting current page to another page after 5 seconds. If youwant to redirect page immediately then do not specify *content* attribute.

```
<!DOCTYPE html>
<html>
<head>
<title>Meta Tags Example</title>
<meta name="keywords" content="HTML, Meta Tags, Metadata" />
<meta name="description" content="Learning about Meta Tags." />
<meta name="revised" content="Tutorialspoint, 3/7/2014" />
```

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CST 205 OBJECT ORIENTED PROGRAMMING USING JAVA

GAP IN THE SYLLABUS – HTML

Mode of Execution: Study Materials Given **Date of Evaluation: 04/01/2023**

SL.NO:	REGISTER NO	NAME	MARKS(20)
1	SNC21CS001	ABHINAV DHARMARAJ	16
2	SNC21CS002	ABHINAV K	14
3	SNC21CS003	ABHINAV K	10
4	SNC21CS004	ABHISREE ASHOKAN	14
5	SNC21CS005	ABIRAM SUNIL	16
6	SNC21CS006	ADARSH CHANDRAN K V	12
7	SNC21CS007	ADARSH KV	15
8	SNC21CS008	ADHITHYA JITHESH	10
9	SNC21CS009	ADWAITH S NIRANJ	10
10	SNC21CS010	AKSHAY P K	11
11	SNC21CS011	AMINA FIZA K V	12
12	SNC21CS012	ANUDEEP K	13
13	SNC21CS013	ANUPAM K V	10
14	SNC21CS014	ARATHI T V	12
15	SNC21CS015	ARJUN P P	11
16	SNC21CS016	ARJUN K V	10
17	SNC21CS017	ASWATHI A V	10
18	SNC21CS018	ASWATHI K V	11
19	SNC21CS019	ATHIRA K V	10
20	SNC21CS020	ATHUL PAVITHRAN	15
21	SNC21CS021	B SREYAS KRISHNAN	11
22	SNC21CS022	FADI ASLAM P V	12
23	SNC21CS023	FATHIMATH THANSEEHA	15
24	SNC21CS024	HAIFA C	10
25	SNC21CS025	HIBA T K	11
26	SNC21CS027	JERLITT VISAL	10
27	SNC21CS028	JISHNU K R	12

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35	SNC21CS036	NANDANA M	12
36	SNC21CS037	NAVYA P	14
37	SNC21CS038	NEERAJ RAVI P V	15
38	SNC21CS040	RAIHANA T P	16
39	SNC21CS041	SARANG V	11
40	SNC21CS042	SHAHEEM A V	10
41	SNC21CS043	SREYAS KRISHNAN	10
42	SNC21CS044	UTHARA M V	15
43	SNC21CS045	VAISHNAV K P	11
44	SNC21CS046	VISHAK K R	12
45	SNC21CS047	VISHAL V V	11
46	SNC21CS048	VYSHAK UMESHAN	13
47	SNC21CS049	YADUKRISHNAN K V	14

0

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CST 205 OBJECT ORIENTED PROGRAMMING USING JAVA

GAP IN THE SYLLABUS – HTML

ASSESSMENT – MCQ

QUESTIONS

1. There are ___ levels of heading in HTML
   a) Three
   b) Four
   c) Five
   d) Six

2. The purpose of markup is to
   a) add hypertext capabilities
   b) enhance the document
   c) both A & B
   d) none of the above

3. Which of the following tags do not require a terminator?
   a) <u>
   b)
   c) <b>
   d) none of the above

4. To get the ordered list we use
   a) <h1>
   b)
   c)
   d) <ml>

5. The Major components of the Web browser are ___
   a) Menu Bar.
   b) ToolBar.
   c) Location
   d) All Of the Above.

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6. Which one of the following tags is used to insert graphics in the webpage.
   a) <image>
   b) <images>
   c) <img>
   d) <graphics>

7. The following html tag is used to display the content as a moving text
   a) <marquee>
   b) </img>
   c) <a href>
   d) none of the above

8. Html comment should be enclosed between
   a) <!– and — >
   b) <! And !>
   c) <!— and –“”
   d) none of the above

9. _____ tag is used before beginning of the paragraph text
   a) <textarea>
   b) <sup>
   c) <p>
   d) <h1>

10. Html document have a extension _____
   a) .htx or .htxl
   b) .htm or .html
   c) .hmt or hmtl
   d) none of the above

11. The _____ element can be used to identify your html file to the outside world
   a) title
   b) body
   c) head
   d) none of the above

12. Which of the following tags do not require a terminator
   a) <u>
   b)
   c) <b>
   d) none of the above

13. Which of the following is true
   a) In tables, header cells are centered by default and the data cells are right-aligned.
   b) In the case of character formatting the tag <TW> is used for typewriter-like text
   c) Unordered list starts with <UL> and ends with <UL>
   d) <SUPR> tag is used for superscripts text

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14. Which of the following is true?
    a) BR tag is used to have a blank line
    b) In tables, the header cell is centred by default and the data cells are right-aligned
    c) The <TR> is used to create a data cell
    d) INPUT tag must have at least 4 attributes

15. The purpose of markup is to
    a) Add hypertext capabilities
    b) Enhance the document
    c) Both a) & b)
    d) None of the above

16. HTML is the method where ordinary text can be converted into
    a) ASCII Text
    b) EBCDIC Text
    c) Hypertext
    d) None of the above

17. The tag to give visual division between sections of the page and which causes the browser to draw an embossed line is
    a) <HL>
    b) <HR>
    c) <UR>
    d) None of the above

18. Which one of the following tags is used to insert graphics on the web page?
    a)<IMAGE>
    b) <IMAGES>
    c) <IMG>
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19. In HTML _____ tag contains the information about the current document such as title etc.
    a) Body
    b) TD
    c) HEAD
    d) None of the above

20. For abbreviation we can use
    a) <abbr> </abbr> tags
    b) <acronym> </acronym>
    c) Both of the Above.

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ANSWER KEY

1. D
2. C
3. B
4. C
5. D
6. C
7. A
8. A
9. C
10. B
11. D
12. B
13. C
14. A
15. C
16. C
17. B
18. C
19. C
20. C

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ABIRAM SUNIL
SNC21CS005

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CST 205 OBJECT ORIENTED PROGRAMMING USING JAVA

GAP IN THE SYLLABUS – HTML

ASSESSMENT – MCQ

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   a) <h1>
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   c) ✓
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5. The Major components of the Web browser are ___
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14/20

Nimisto
04/01/'23

Nanya P
SNC21CS037

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CST 205 OBJECT ORIENTED PROGRAMMING USING JAVA

GAP IN THE SYLLABUS – HTML

ASSESSMENT – MCQ

QUESTIONS

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   b) Four
   c) Five
   d) Six

0

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   c) both A & B
   d) none of the above

1

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   c) <b>
   d) none of the above

1

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   a) <h1>
   b)
   c)
   d) <ml>

1

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   a) Menu Bar.
   b) ToolBar.
   c) Location
   d) All Of the Above.

0

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   a) <image>
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   c) <img>
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0

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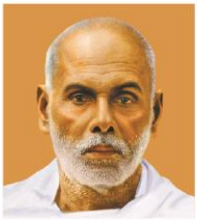
KANNUR

Sree Narayana Guru College
of Engineering & Technology
CHALAKKODE P.O., KOROM, PAYYANUR, KANNUR-670 307



Est. 2003

LAB

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CSL 203 OBJECT ORIENTED PROGRAMMING LAB IN JAVA

GAP IN THE SYLLABUS – JAVA PACKAGES

Mode of Execution: Lab Session
Venue:Networking Lab

Date of Execution : 27/10/2022

SL.NO:	REGISTER NO	NAME	SIGNATURE
1	SNC21CS001	ABHINAV DHARMARAJ	
2	SNC21CS002	ABHINAV K	
3	SNC21CS003	ABHINAV K	
4	SNC21CS004	ABHISREE ASHOKAN	
5	SNC21CS005	ABIRAM SUNIL	
6	SNC21CS006	ADARSH CHANDRAN K V	
7	SNC21CS007	ADARSH KV	
8	SNC21CS008	ADHITHYA JITHESH	
9	SNC21CS009	ADWAITH S NIRANJ	
10	SNC21CS010	AKSHAY P K	
11	SNC21CS011	AMINA FIZA K V	Absent
12	SNC21CS012	ANUDEEP K	
13	SNC21CS013	ANUPAM K V	
14	SNC21CS014	ARATHI T V	
15	SNC21CS015	ARJUN P P	
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23	SNC21CS023	FATHIMATH THANSEEHA	

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24	SNC21CS024	HAIFA C	
25	SNC21CS025	HIBA T K	
26	SNC21CS027	JERLITT VISAL	
27	SNC21CS028	JISHNU K R	
28	SNC21CS029	KEERTHANA K	
29	SNC21CS030	M MOHAMMED FIDAN	
30	SNC21CS031	MOHAMMED ZAHRAN P V	
31	SNC21CS032	MUHAMMED ADNAN E M	
32	SNC21CS033	MOHAMMED AMEN NAJEEB	
33	SNC21CS034	MUHAMMED SHEHZAD SIDHIK	
34	SNC21CS035	MUHAMMED THAJUDHEEN	
35	SNC21CS036	NANDANA M	
36	SNC21CS037	NAVYA P	
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45	SNC21CS047	VISHAL V V	
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27/10/22

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CSL 203 OBJECT ORIENTED PROGRAMMING LAB IN JAVA

GAP IN THE SYLLABUS – JAVA PACKAGES

What is package?

Packages are used in Java, in-order to avoid name conflicts and to control access ofclass, interface and enumeration etc.

A package can be defined as a group of similartypes of classes, interface, enumeration or sub-package.

Using package it becomes easier to locate the related classes and italso provides a good structure for projects with hundreds of classes and other files.

Benefits of using package in java:

1) Java package is used to categorize the classes and interfaces so that they canbe easily maintained.
2) Java package provides access protection.
3) Java package removes naming collision.
4) This **packages** can be provide reusability of code.
5) We can create our own **package** or extend already available **package**.

Java Packages: Types:

- **Built-in Package:** Existing Java package forexample java.lang, java.util,java.io etc.
- **User-defined-package:** Java package created by user to categorize theirproject's classes and interface.

- A java package is a group of similar types of classes, interfaces and sub-packages. Package in java can be categorized in two form, **built-in package** and **user-definedpackage.**
- There are many built-in packages such as **java, lang, awt, javax, swing, net, io, util, sql** etc.

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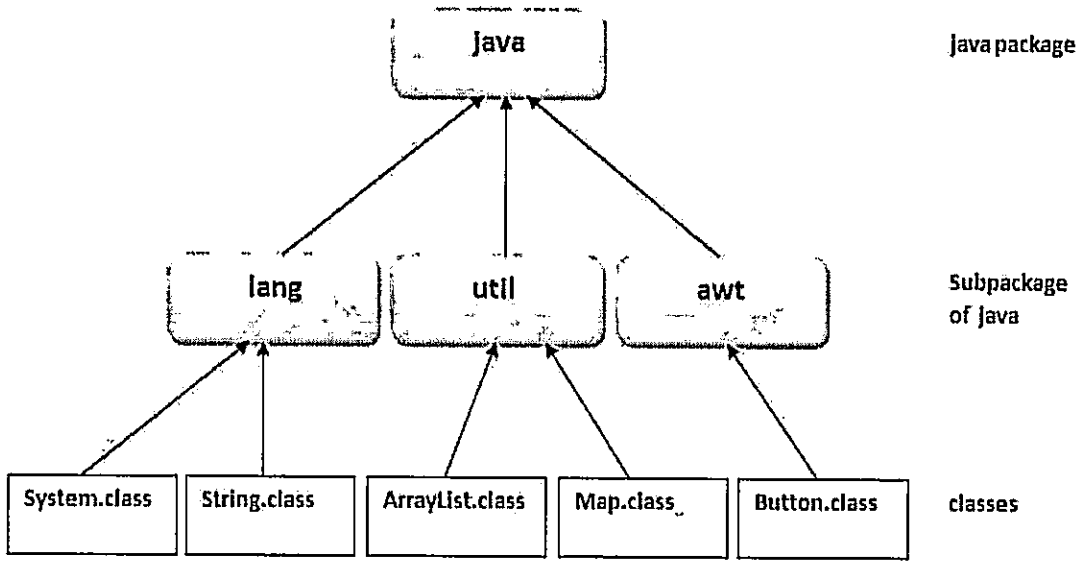

The package is both a naming and a visibility control mechanism. You can define classes inside a package that are not accessible by code outside that package. You can also define class members that are exposed only to other members of the same package. This allows your classes to have intimate knowledge of each other, but not expose that knowledge to the rest of the world.

Advantage of Java Package

- Java package is used to categorize the classes and interfaces so that they can be easilymaintained.
- Java package provides access protection. **protected** and **default** have package level access control. A protected member is accessible by classes in the same package and its subclasses. A default member (withoutany access specifier) is accessible by classes in the same package only.
- Java package removes naming collision (namespace management)

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For example there can be two classes with name **Employee** in two packages, **college.staff.cse.Employee** and **college.staff.ee.Employee.**

Defining a Package

- The **package** keyword is used to create a package in java.
- The package statement defines a name space in which classes are stored.
- While creating a package, you should choose a name for the package and include a package statement along with that name at the top of every source file that contains theclasses, interfaces, enumerations, and annotation types that you want to include in the package.
- The package statement should be the first line in the source file. There can be only onepackage statement in each source file, and it applies to all types in the file.
- If a package statement is not used then the class, interfaces, enumerations, and annotation types will be placed in the current default package, which has no name.
- To compile the Java programs with package statements, you have to use -d option asshown below.

  javac -d Destination_folder file_name.java

  - This is the general form of the package statement:

    package pkg;

  Here, **pkg** is the name of the package. For example, the following statement creates apackage called **MyPackage**:

    package myPackage;

  - Java uses file system directories to store packages. For example, the .class files for anyclasses you declare to be part of **MyPackage** must be stored in a directory called **MyPackage.** Remember that case is significant, and the directory name must match thepackage name exactly.
  - More than one file can include the same package statement. The package statement simply specifies to which package the classes defined in a file belong. It does not excludeother classes in other files from being part of that same package. Most real-world packages are spread across many files.

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- You can create a hierarchy of packages. To do so, simply separate each package namefrom the one above it by use of a period. The general form of a multileveled package statement is shown here: **package pkg1[.pkg2[.pkg3]];**

Finding Packages and CLASSPATH

A package hierarchy must be reflected in the file system of your Java development system. For example, a package declared as java.awt.image needs to be stored in java\awt\image in a Windows environment. Finding Packages and CLASSPATH

As just explained, packages are mirrored by directories. This raises an important question: How does the Java run-time system know where to look for packages that you create? The answer hasthree parts.

- First, by default, the Java run-time system uses the current working directory as its starting point. Thus, if your package is in a subdirectory of the current directory, it will befound.
- Second, you can specify a directory path or paths by setting the **CLASSPATH** environmental variable.
- Third, you can use the **-classpath** option with java and javac to specify the path to yourclasses.

For example, consider the following package specification:

Package MyPack

In order for a program to find **MyPack**, one of three things must be true. Either the program can be executed from a directory immediately above **MyPack**, or the **CLASSPATH** must be set to include the path to **MyPack**, or the **-classpath** option must specify the path to **MyPack** when theprogram is run via java.

When the second two options are used, the class path must not include **MyPack**, itself. It mustsimply specify the path to **MyPack**. For example, in a Windows environment, if the path to MyPack is

```
C:\MyPrograms\Java\MyPack
```

then the class path to **MyPack** is

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```
C:\MyPrograms\Java
```

CLASSPATH is actually an environment variable in Java, and tells Java applications and theJava Virtual Machine (JVM) where to find the libraries of classes. These include any that youhave developed on your own.

An environment variable is a global system variable, accessible by the computer's operating system (e.g., Windows). Other variables include COMPUTERNAME, USERNAME (computer'sname and user name).

In Java, CLASSPATH holds the list of Java class file directories, and the JAR file, which isJava's delivered class library file.

Access Protection

Classes and packages are both means of encapsulating and containing the name space and scopeof variables and methods. Packages act as containers for classes and other subordinate packages.Classes act as containers for data and code. The class is Java's smallest unit of abstraction.

Because of the interplay between classes and packages, Java addresses four categories ofvisibility for class members:

- Subclasses in the same package
- Non-subclasses in the same package
- Subclasses in different packages
- Classes that are neither in the same package nor subclasses

- Anything declared **public** can be accessed from anywhere in the project.
- Anything declared **private** cannot be seen outside of its class.
- When a member does not have an explicit access specification, it is visible to subclassesas well as to other classes in the same package. This is the **default** access.
- If you want to allow an element to be seen outside your current package, but only toclasses that subclass your class directly, then declare that element **protected**.

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	default	private	protected	public
Same Class	Yes	Yes	Yes	Yes
Same package subclass	Yes	No	Yes	Yes
Same package non-subclass	Yes	No	Yes	Yes
Different package subclass	No	No	Yes	Yes
Different package non-subclass	No	No	No	Yes

When a class is public, it must be the only public class declared in the file, and the file must havethe same name as the class.

Importing Packages

There are three ways to access the package from outside the package.

1. **fully qualified name.**
2. **import packagename.classname**
3. **import packagename.*;**

- **import** keyword is used to import built-in and user-defined packages into your javasource file so that your class can refer to a class that is in another package by directly using its name.

There are 3 different ways to refer to any class that is present in a different package:

1. **Using fully qualified name**
   If you use fully qualified name to import any class into your program, then only that particular class of the package will be accessible in your program, other classes in thesame package will not be accessible. For this approach, there is no need to use the import statement. But you will have to use the fully qualified name every time you are accessing the class or the interface, which can look a little untidy if the package nameis long.

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This is generally used when two packages have classes with same names. For example: java.util and java.sql packages contain Date class.

Example :

```
//save by A.javapackage pack; public class A {
        public void msg() { System.out.println("Hello");
        }

}

//save by B.javapackage mypack; class B {
        public static void main(String args[]) {

                pack.A obj = new pack.A();   //using fully qualified nameobj.msg();

        }

}
```

Output:

Hello

2. To import only the class/classes you want to use

If you import packagename.classname then only the class with name classname in the package with name packagename will be available for use.

Example :

```
//save by A.javapackage pack; public class A {
        public void msg() { System.out.println("Hello");
        }

}
```

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```
//save by B.javapackage mypack; import pack.A;
class B {
        public static void main(String args[]) {A obj = new A();
                obj.msg();
        }}
```

Output:

Hello

3. To import all the classes from a particular package

If you use **packagename.***, then all the classes and interfaces of this package will be accessiblebut the classes and interface inside the subpackages will not be available for use.

The import keyword is used to make the classes and interface of another package accessible tothe current package.

Example :

```
//save by First.javapackage learnjava; public class First{
        public void msg() { System.out.println("Hello");
        }
}

//save by Second.javapackage Java;
import learnjava.*;class Second {
        public static void main(String args[]) {First obj = new First();
                obj.msg();
        }
```

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}

Output:

Hello

NOTES:

- A package inside another package is known as sub package.
- A file can have only a package declaration but can have multiple import statements.
- While creating a package, care should be taken that the statement for creating packagemust be written before any other import statements.

// not allowed import package p1.*;package p3;
Below code is correct, while the code mentioned above is incorrect.

//correct syntaxpackage p3;
import package p1.*;

Subpackage in java:

Package inside the package is called the **subpackage.** It should be created **to categorize the package further.**

Let's take an example, Sun Microsystem has definded a package named java that contains many classes like System, String, Reader, Writer, Socket etc. These classes represent a particular group e.g. Reader and Writer classes are for Input/Output operation, Socket and ServerSocket classes are for networking etc andso on. So, Sun has subcategorized the java package into subpackages such as lang,net, io etc. and put the Input/Output related classes in io package, Server and ServerSocket classes in net packages and so on.

package com.javatpoint.core;

class Simple{

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```
 public static void main(String args[]){ System.out.println("Hello  subpackage");
  }
}
```

To Compile: javac -d . Simple.java

To Run: java com.javatpoint.core.Simple

Output: Hello subpackage

How to send the class file to another directory or drive:

There is a scenario, I want to put the class file of A.java source file in classes folderof c: drive.

For example:

```
//save as Simple.javapackage mypack; public class Simple
{
 public static void main(String args[])
{
System.out.println("Welcome to package");
}
```

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To Compile:

e:\sources> javac -d c:\classes Simple.javaTo Run:

To run this program from e:\source directory, you need to set classpath of the directorywhere the class file resides.

e:\sources> set classpath=c:\classes;.;e:\sources> java mypack.Simple

Another way to run this program by -classpath switch of java:

The -classpath switch can be used with javac and java tool.

To run this program from e:\source directory, you can use -classpath switch of javathat tells where to look for class file. For example:

e:\sources> java -classpath c:\classes mypack.Simple

Output: Welcome to package.

Built Packages

Built Packages are provided for the programme in-order toreduce the burden.Some of the frequently used built in packages are:

1. lang
2. util
3. io
4. awt
5. net
6. applet

*These built in packages are placed in the package "java".

*In order to use these packages/classes present in the packagewe need to import them in the current program.

*The syntax for importing packages is: **import java.util.***

*The above statement tells the compiler that you need toimport all the classes present in the "util" package,which in turn present in the "java" package.

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*The asterisk symbol tells the compiler to import all the classesin present in the util package.If you want to import specific class then we need to mention the name of the class insteadof the asterisk.

For eg: **import java.util.Scanner**

1. **java.lang:**language supports classes.These are classes that java compileritself uses and therefore automatically imported.They include classes for primitive types,stirngs,maths,threads and exceptions.
2. **java.util:**language utility classes such as vecotrs,hash tables,randomnumbers,date etc.
3. **java.io:**input/output support classes.They provide the facility forinput/output of data.
4. **java.awt:**set of classes for implementing graphical user interface.Theyinclude classes for windows,buttons,lists
5. **java.net:**Classes for networking.They include classes for communicating with local computers as well as with internal servers.

Illustration of user-defined packages:

Creating our first package:
File name – ClassOne.java

```
package  package_name; public  class

ClassOne {
   public void methodClassOne() { System.out.println("Hello there its
      ClassOne");
   }
}
```

Creating our second package:
File name – ClassTwo.java package

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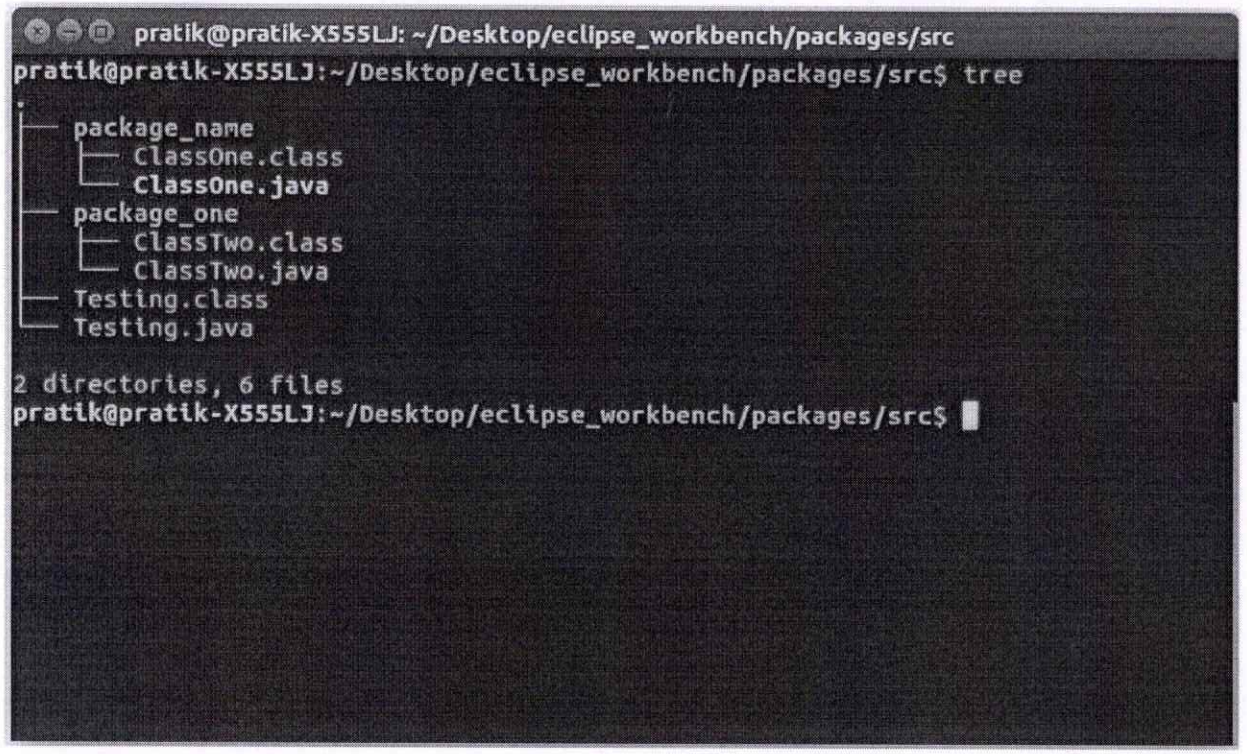

Important points:

1. Every class is part of some package.
2. If no package is specified, the classes in the file goes into a special unnamed package (the same unnamed package for all files).
3. All classes/interfaces in a file are part of the same package. Multiple files can specify the same packagename.
4. If package name is specified, the file must be in a subdirectory called name (i.e., the directory name must match the package name).
5. We can access public classes in another (named) package using: **package-name.class-name**

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```
package_one;

public class ClassTwo {
   public void methodClassTwo(){ System.out.println("Hello there i
      am ClassTwo");
   }
}
```

Making use of both the created packages:
File name – Testing.java

```
import      package_one.ClassTwo;      import
package_name.ClassOne;

public class Testing {
   public static void main(String[] args){ClassTwo a =
      new ClassTwo(); ClassOne b = new ClassOne();
      a.methodClassTwo(); b.methodClassOne();
   }
}
```

Output:

```
Hello there i am ClassTwo
Hello there its ClassOne
```

Now having a look at the directory structure of both the packages and the testing class file:

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CSL 203 OBJECT ORIENTED PROGRAMMING LAB IN JAVA

GAP IN THE SYLLABUS – JAVA PACKAGES

Mode of Execution: Lab Session
Venue:Networking Lab

Date of Evaluation : 10/11/2022

SL.NO:	REGISTER NO	NAME	MARKS(25)
1	SNC21CS001	ABHINAV DHARMARAJ	11
2	SNC21CS002	ABHINAV K	8
3	SNC21CS003	ABHINAV K	7
4	SNC21CS004	ABHISREE ASHOKAN	9
5	SNC21CS005	ABIRAM SUNIL	11
6	SNC21CS006	ADARSH CHANDRAN K V	12
7	SNC21CS007	ADARSH KV	10
8	SNC21CS008	ADHITHYA JITHESH	9
9	SNC21CS009	ADWAITH S NIRANJ	9
10	SNC21CS010	AKSHAY P K	9
11	SNC21CS011	AMINA FIZA K V	17
12	SNC21CS012	ANUDEEP K	11
13	SNC21CS013	ANUPAM K V	10
14	SNC21CS014	ARATHI T V	13
15	SNC21CS015	ARJUN P P	19
16	SNC21CS016	ARJUN K V	8
17	SNC21CS017	ASWATHI A V	19
18	SNC21CS018	ASWATHI K V	19
19	SNC21CS019	ATHIRA K V	15
20	SNC21CS020	ATHUL PAVITHRAN	17
21	SNC21CS021	B SREYAS KRISHNAN	8
22	SNC21CS022	FADI ASLAM P V	10
23	SNC21CS023	FATHIMATH THANSEEHA	15
24	SNC21CS024	HAIFA C	17
25	SNC21CS025	HIBA T K	17
26	SNC21CS027	JERLITT VISAL	11
27	SNC21CS028	JISHNU K R	12

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CSL 203 OBJECT ORIENTED PROGRAMMING LAB IN JAVA

GAP IN THE SYLLABUS – JAVA PACKAGES

ASSESSMENT – MCQ

QUESTIONS

1. Which of these keywords is used to define packages in Java?
   a) pkg
   b) Pkg
   c) package
   d) Package

2. Which of these is a mechanism for naming and visibility control of a class and its content?
   a) Object
   b) Packages
   c) Interfaces
   d) None of the Mentioned.

3. Which of this access specifies can be used for a class so that its members can be accessed by a different class in the same package?
   a) Public
   b) Protected
   c) No Modifier
   d) All of the mentioned

4. Which of these access specifiers can be used for a class so that its members can be accessed by a different class in the different package?
   a) Public
   b) Protected
   c) Private
   d) No Modifier

5. Which of the following is the correct way of importing an entire package 'pkg'?
   a) import pkg.

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b) Import pkg.
c) import pkg.*
d) Import pkg.*

6. Which of the following is an incorrect statement about packages?
a) Package defines a namespace in which classes are stored
b) A package can contain other package within it
c) Java uses file system directories to store packages
d) A package can be renamed without renaming the directory in which the classes are stored

7. Which of the following package stores all the standard java classes?
a) lang
b) java
c) util
d) java.packages

8. What will be the output of the following Java program?

```
package pkg;
class display
{
   int x;
   void show()
   {
      if (x > 1)
         System.out.print(x + " ");
   }
}
class packages
{
   public static void main(String args[])
   {
      display[] arr=new display[3];
      for(int i=0;i<3;i++)
         arr[i]=new display();
      arr[0].x = 0;
      arr[1].x = 1;
      arr[2].x = 2;
      for (int i = 0; i < 3; ++i)
```

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```
            arr[i].show();
        }
    }
```

Note : packages.class file is in directory pkg;

a) 0
b) 1
c) 2
d) 0 1 2

9. What is a package in Java?

a) A Package is a collection of files of type Java Class, Interfaces, or Abstract Class

b) A Package is simply a Directory or Folder with Java Classes

c) A Package usually contains Java Classes written for a specific purpose or problem

d) All the above

10. Choose the correct syntax of a Java Package below.

a) package PACKAGE_NAME;
b) package PACKAGE_NAME.*;
c) pkg PACKAGE_NAME;
d) pkg PACKAGE_NAME.*;

11. What is the maximum number of Java Class files that can be kept inside a single Java Package?

a) 8
b) 64
c) 128
d) Unlimited

12. The name of a package is the name of the ___ in Java.

a) folder
b) All parent folders separated by DOT symbols
c) All parent packages separated by DOT symbols
d) All the above.

13. The keyword used to import a package into Java class or Interface is

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a. import
b. download
c. use
d. None of the above

14. Choose correct declaration and importing of packages in Java.

a) package SOMEPACKAGE;
import PACKAGE_N.*;

b) import PACKAGE_N.*;
package SOMEPACKAGE;

c) import PACKAGE_M.*;
package SOMEPACKAGE;
import PACKAGE_N.*;

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15. When importing a Package, the Class is actually importing ____.

a. Classes or Interfaces from the package
b. Constants
c. Methods
d. None of the above

16. The package declaration statement should be the first statement in a Java file. State TRUE or FALSE.

a) TRUE
b) FALSE

17. You can place a comment before the Package Declaration statement in Java. State TRUE or FALSE.

a) TRUE
b) FALSE

18. How does JAVAC or JAVA (JVM) find the packages that will be used inside classes by an import statement?

a) If the packages are defined on the same root level as the compiling or running class file, Java knows it.
b) You should manually use the CLASSPATH or CP command to include the path of the package or single-class for compiling and running

c) You can copy the JAR files in LIB folder of Java inside Program Files
d) All the above

19. Which is the default Java package that will be auto included (imported) in the classpath while Compiling and Running a Java program?
a) java.io
b) java.util
c) java.net
d) java.lang

20. What are the popular Classes or Interfaces inside a Java Language Pack (java.lang)?
a) Byte, Character, Short, Integer, Float, Long, Number
b) Math, String, StringBuffer, StringBuilder
c) Thread, Throwable, Exception, Error.
d) All the above

21. Which is the symbol used to separate a super-package and a sub-package at the time of declaring or importing in a Java program?
a) Dollar ($)
b) Pound (#)
c) Period (.) or DOT
d) Arrow (->)

22. Choose a correct statement about using the classes or interfaces or abstract classes inside the packages in our Java program.
a) You can extend the class imported from the package.
b) You can implement the interfaces imported from the package.
c) You can extend the abstract classes imported from the package.
d) All the above

23. What are the uses of a Java Package?
a) A package contains ready-to-use classes written for a specific purpose.
b) Packages are easy to distribute your code. It is nothing but reusability. Instead of writing code afresh, you can take advantage of the existing classes of a package. Simply import it and use.

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c) Packages help in maintaining the code easily. Each sub-package may be maintained for more specific purposes. You can reuse the class names in sub-packages or other packages without name clash.

d) All the above

24. Package in Java is a mechanism to encapsulate a _____.

a) Classes

b) Sub Packages

c) Interfaces

d) All of the above

25. Which of the following packages is used to includes classes to create user interface like Button and Checkbox?

a) java.lang

b) java.net

c) java.awt

d) java.io

ANSWER KEY

1. C
2. B
3. D
4. A
5. C
6. D
7. B
8. C
9. D
10.A
11.D
12.D
13.A
14.A
15.A
16.A
17.A
18.D
19.D
20.D
21.C
22.D
23.D
24.D
25.C

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Aswathi. A.V.
SNC21CS017

19/25

Nimisha 10/11/22

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GAP IN THE SYLLABUS – JAVA PACKAGES

ASSESSMENT – MCQ

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2. Which of these is a mechanism for naming and visibility control of a class and its content?
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b) Import pkg.
c) import pkg.*
d) Import pkg.*

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   int x;
   void show()
   {
      if (x > 1)
         System.out.print(x + " ");
   }
}
class packages
{
   public static void main(String args[])
   {
      display[] arr=new display[3];
      for(int i=0;i<3;i++)
         arr[i]=new display();
      arr[0].x = 0;
      arr[1].x = 1;
      arr[2].x = 2;
      for (int i = 0; i < 3; ++i)
```

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```
            arr[i].show();
        }
    }
```

Note : packages.class file is in directory pkg;

a) 0

b) 1

c) 2

d) 0 1 2

9. What is a package in Java?

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c) A Package usually contains Java Classes written for a specific purpose or problem

d) All the above

10. Choose the correct syntax of a Java Package below.

a) package PACKAGE_NAME;

b) package PACKAGE_NAME.*;

c) pkg PACKAGE_NAME;

d) pkg PACKAGE_NAME.*;

11. What is the maximum number of Java Class files that can be kept inside a single Java Package?

a) 8

b) 64

c) 128

d) Unlimited

12. The name of a package is the name of the ___ in Java.

a) folder

b) All parent folders separated by DOT symbols

c) All parent packages separated by DOT symbols

d) All the above.

13. The keyword used to import a package into Java class or Interface is _____

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a. import
b. download
c. use
d. None of the above

14. Choose correct declaration and importing of packages in Java.

a) package SOMEPACKAGE;
import PACKAGE_N.*;

b) import PACKAGE_N.*;
package SOMEPACKAGE;

c) import PACKAGE_M.*;
package SOMEPACKAGE;
import PACKAGE_N.*;

15. When importing a Package, the Class is actually importing _____.

a. Classes or Interfaces from the package
b. Constants
c. Methods
d. None of the above

16. The package declaration statement should be the first statement in a Java file. State TRUE or FALSE.

a) TRUE
b) FALSE

17. You can place a comment before the Package Declaration statement in Java. State TRUE or FALSE.

a) TRUE
b) FALSE

18. How does JAVAC or JAVA (JVM) find the packages that will be used inside classes by an import statement?

a) If the packages are defined on the same root level as the compiling or running class file, Java knows it.
b) You should manually use the CLASSPATH or CP command to include the path of the package or single-class for compiling and running

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c) You can copy the JAR files in LIB folder of Java inside Program Files

d) All the above

19. Which is the default Java package that will be auto included (imported) in the classpath while Compiling and Running a Java program?

a) java.io

b) java.util

c) java.net

d) java.lang

20. What are the popular Classes or Interfaces inside a Java Language Pack (java.lang)?

a) Byte, Character, Short, Integer, Float, Long, Number

b) Math, String, StringBuffer, StringBuilder

c) Thread, Throwable, Exception, Error.

d) All the above

21. Which is the symbol used to separate a super-package and a sub-package at the time of declaring or importing in a Java program?

a) Dollar ($)

b) Pound (#)

c) Period (.) or DOT

d) Arrow (->)

22. Choose a correct statement about using the classes or interfaces or abstract classes inside the packages in our Java program.

a) You can extend the class imported from the package.

b) You can implement the interfaces imported from the package.

c) You can extend the abstract classes imported from the package.

d) All the above

23. What are the uses of a Java Package?

a) A package contains ready-to-use classes written for a specific purpose.

b) Packages are easy to distribute your code. It is nothing but reusability. Instead of writing code afresh, you can take advantage of the existing classes of a package. Simply import it and use.

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c) Packages help in maintaining the code easily. Each sub-package may be maintained for more specific purposes. You can reuse the class names in sub-packages or other packages without name clash.

d) All the above

24. Package in Java is a mechanism to encapsulate a _____.

a) Classes

b) Sub Packages

c) Interfaces

d) All of the above

25. Which of the following packages is used to includes classes to create user interface like Button and Checkbox?

a) java.lang

b) java.net

c) java.awt

d) java.io

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CSL 203 OBJECT ORIENTED PROGRAMMING LAB IN JAVA

GAP IN THE SYLLABUS – JAVA PACKAGES

ASSESSMENT – MCQ

QUESTIONS

1. Which of these keywords is used to define packages in Java?
   a) pkg
   b) Pkg
   c) package
   d) Package

1

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2. Which of these is a mechanism for naming and visibility control of a class and its content?
   a) Object
   b) Packages
   c) Interfaces
   d) None of the Mentioned.

1

3. Which of this access specifies can be used for a class so that its members can be accessed by a different class in the same package?
   a) Public
   b) Protected
   c) No Modifier
   d) All of the mentioned

1

4. Which of these access specifiers can be used for a class so that its members can be accessed by a different class in the different package?
   a) Public
   b) Protected
   c) Private
   d) No Modifier

X

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5. Which of the following is the correct way of importing an entire package 'pkg'?
   a) import pkg.

b) Import pkg.
c) import pkg.*
d) Import pkg.*

6. Which of the following is an incorrect statement about packages?
a) Package defines a namespace in which classes are stored
b) A package can contain other package within it
c) Java uses file system directories to store packages
d) A package can be renamed without renaming the directory in which the classes are stored

7. Which of the following package stores all the standard java classes?
a) lang
b) java
c) util
d) java.packages

8. What will be the output of the following Java program?

```
package pkg;
class display
{
   int x;
   void show()
   {
      if (x > 1)
         System.out.print(x + " ");
   }
}
class packages
{
   public static void main(String args[])
   {
      display[] arr=new display[3];
      for(int i=0;i<3;i++)
         arr[i]=new display();
      arr[0].x = 0;
      arr[1].x = 1;
      arr[2].x = 2;
      for (int i = 0; i < 3; ++i)
```

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```
            arr[i].show();
        }
    }
```

Note : packages.class file is in directory pkg;

a) 0
b) 1
c) 2
d) 0 1 2

9. What is a package in Java?

a) A Package is a collection of files of type Java Class, Interfaces, or Abstract Class

b) A Package is simply a Directory or Folder with Java Classes

c) A Package usually contains Java Classes written for a specific purpose or problem

d) All the above

10. Choose the correct syntax of a Java Package below.

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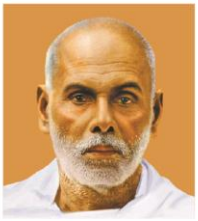

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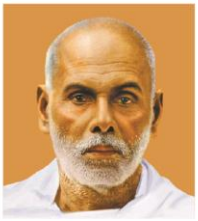

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THEORY

SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY, PAYYANUR

Promoted by Sree Bhakthi Samvardhini Yogam

(Affiliated to KTU, Recognised by AICTE)

DEPARTMENT OF ELECTRONICS AND COMMUNIATION ENGINEERING

ASSESMENT FOR [illegible] SYLLABUS

ECT 401 – MICROWAVES AND ANTENNAS

R.No	NAME	TOTAL MARK
1	ARJUN ASHOK K	8
2	JITHIN SASIDHARAN N V	6
3	KEERTHANA C V	6
4	MARIYAMBI	6
5	SANISHMA SACHITHANAND	8

Faculty In Charge

HOD ECE

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KANNUR

Sanchana Santhosh
Roll No: 05

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ECT401 MICROWAVES AND ANTENNAS

Questions based on the topic E PLANE TEE

GAP IN SYLLABUS

1. What is the function of an E-plane tee in microwave engineering?
A) To amplify signals
B) To attenuate signals
C) To split an input signal into two outputs
D) To combine two input signals into one output

8/10

2. Which of the following statements is true about the E-plane tee?
A) It is a type of microwave filter
B) It is used for impedance matching
C) It is a passive microwave component
D) It is used to combine signals in a power divider

3. In an E-plane tee, where is the input signal applied?
A) In the E-plane
B) In the H-plane
C) At the junction of the E-plane and H-plane
D) At the end of the tee

4. What is the characteristic impedance of an E-plane tee typically matched to?
A) 50 ohms
B) 75 ohms
C) 100 ohms
D) 300 ohms

5. Which of the following waveguide components is most similar in function to an E-plane tee?
A) Magic tee
B) Isolator
C) Circulator
D) Directional coupler

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JITHIN
Roll:no:02

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

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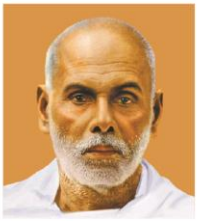

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LAB

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DEPARTMENT OF ELECTRONICS AND COMMUNCATION ENGINEERING
ECT202: ANALOG CIRCUITS AND SIMULATION LAB
GAP IN THE SYLLABUS -DIODE CHARACTERISTICS

Mode of Execution: Theory / Practical
Venue:- Lab

Date of Evaluation : 27/6/22

SL.NO:	REGISTER NO	NAME	MARK (10)	SIGNATURE
1	SNC21EC001	ARUN K	6	
2	SNC21EC002	JISHNU GIRISH	5	
3	SNC21EC003	MARCH MOHAN	5	
4	SNC21EC004	MIDHUN KRISHNAN	6	
5	SNC21EC005	VISHNU U	4	

HoD ECE

Thrividhya S

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Gap in the syllabus

Design

Resonant frequency is given by the expression; $f_o = 1/2\pi\sqrt{LC}$.

Let the required f_o be 5 kHz.

Take R = Ten times the output impedance of the function generator to avoid loading o the function generator, 5.6 k.

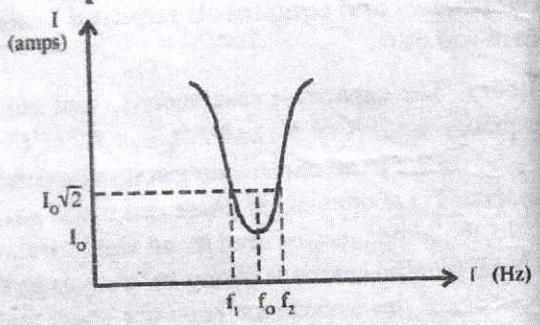
Assume C = 0.01 μF. Then L = 56 mH (std.).

Take R_L = 100 Ω to limit the current through the inductor.

Observation

Frequency Hz	V_o in Volts	$I = V_o/R$ Amps

Graph



Result

Resonant frequency = ...Hz

Bandwidth = ...Hz

Quality factor Q = ...

Answered viva-voce questions

1. What are the applications of parallel LC circuits ?

LC circuits are used in RF sections of radio and TV receivers. They are also used in tun amplifiers and other tuning purposes.

2.3 DIODE CHARACTERISTICS

Aim To plot the forward and reverse V-I characteristics of silicon and germanium diodes an calculate their static and dynamic resistances.

Components and equipments required Diodes, rheostat, voltmeter, ammeter and dc sourc

Theory When a P-type and an N-type semiconductors are joined together, a junction diode created. It has the unique ability to permit current only in one direction. The lead connected the P-type semiconductor is called anode and that connected to the N-type is called cathod The P-type and N-type semiconductors are electrically neutral before the junction is forme

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As soon as the junction is formed, majority carriers are trying to diffuse through the junction. This happens due to the concentration gradient of holes and electrons existing inside the diode. Due to the diffusion of majority carriers from P-region to N-region and vice versa, neutrality ends and a potential barrier forms across the junction. This barrier potential is 0.6 V for silicon and 0.4 V for germanium approximately. The region thus created is devoid of majority carriers. It has a depth of about 1 μm and is called depletion region.

Forward Bias If the anode of the diode is connected to the positive terminal of a battery and cathode to the negative terminal, the set up is called forward bias. The diode does not pass any current till the battery voltage exceeds the potential barrier. Once the battery potential exceeds the barrier potential, high forward current in the order of mA flows through the diode due to the movement (drift) of holes and electrons.

Reverse Bias When the positive terminal of a battery is connected to the N-type and negative terminal is connected to the P-type, the diode is said to be reverse biased. This connection makes the majority carriers in the semiconductor move away from the junction. So the depletion region gets more widened. The minority carriers, but move towards the junction and cause a minute current flow through the diode which is in the order of micro-amperes in germanium diodes and nano-amperes in silicon diodes.

Static and dynamic resistances of the diode When the diode is forward biased, it offers a definite resistance in the circuit. The static resistance or DC resistance is the ratio of DC voltage across the diode to the DC current flows through it. Dynamic resistance or AC resistance of the diode at any point is the reciprocal of the slope of the tangent of the characteristic curve at that point.

$$\text{i.e., Dynamic resistance} = \frac{\text{Change in voltage}}{\text{Resulting change in current}} = \frac{\Delta V}{\Delta I}$$

Procedure

1. Identify the anode and cathode terminals of an 1N4001 diode (or equivalent silicon diode such as BY126) and test it using a multimeter. Set up the circuit on breadboard as shown in fig.1 keeping the rheostat at the minimum position.
2. Vary the rheostat settings so that the voltmeter reading varies from 0 to 0.7 V or 0.8 V in steps of 0.1 V. Take the readings of voltmeter and ammeter and enter it in the tabular column for the forward bias connection.
3. Repeat the step no.2, using OA79 diode in place of 1N4001.
4. Give the circuit as shown in figure.2. (It is not practical to measure the reverse current through a Si diode since it is in the order of nA). Vary the input voltage from 0 to 10 V in steps of 1 V using the rheostat and enter the ammeter and voltmeter readings in the tabular column for reverse bias condition. Plot all the three curves on a single graph sheet.
5. To measure forward static resistance, consider a point on the forward characteristics (say, 10 mA) and note the corresponding voltage and current. The ratio of voltage to current is the static resistance. To measure reverse static resistance, repeat this step by considering another point on reverse characteristics.
6. To measure dynamic forward resistance, for a particular DC current, find out the reciprocal

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of the slope at the point corresponding to that current. Dynamic reverse resistance is extremely high because the slope is almost zero.

Circuit diagram

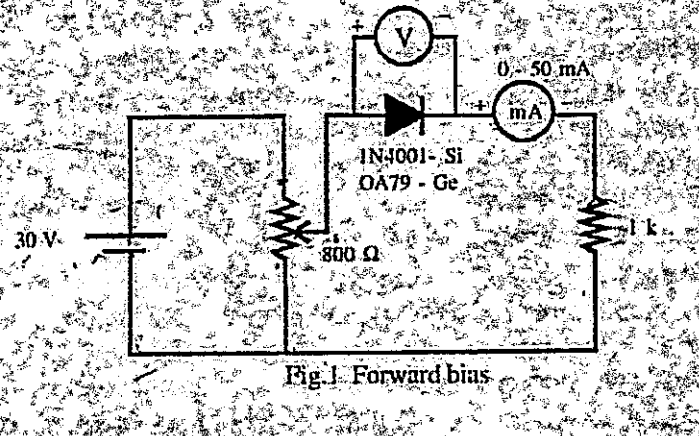

Fig.1 Forward bias

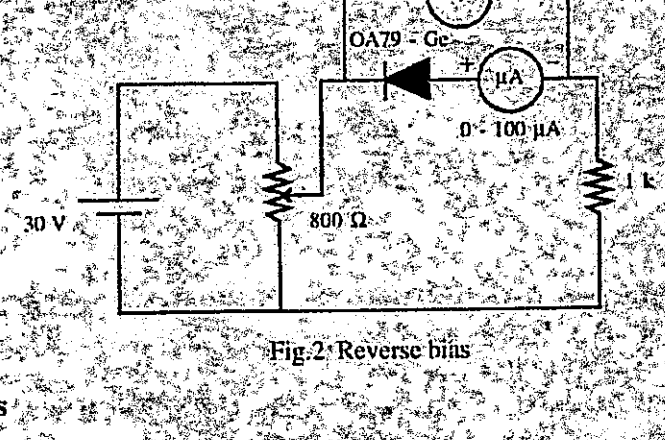

Fig.2 Reverse bias

Observations

1N4001

V (Volts)	I (mA)

Forward bias

OA79

V (Volts)	I (mA)

Forward bias

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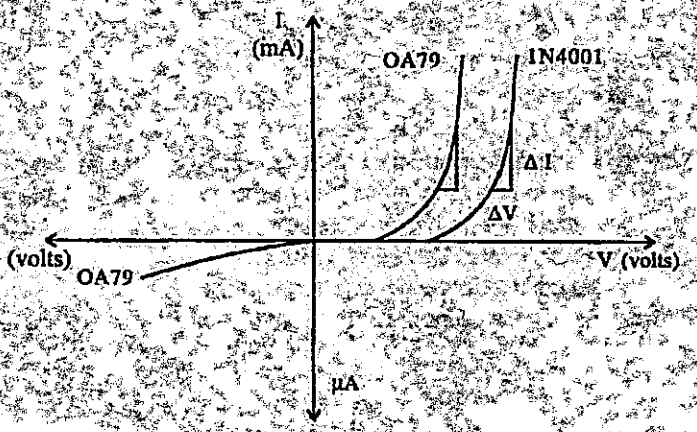
ex-

Graph

OA79

V (Volts)	I (μA)

Reverse bias



Result Silicon diode 1N4001:

Cut in voltage = ...V

Dynamic forward resistance at 10 mA = ...Ω

Static forward resistance at 10 mA = ...Ω

Germanium diode OA79:

Cut in voltage = ...V

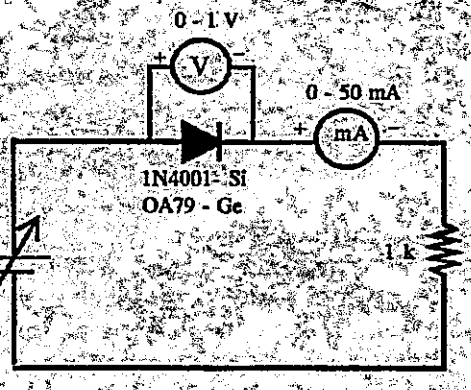
Dynamic forward resistance at 10 mA = ...Ω

Dynamic reverse resistance at 10 μA = ...Ω

Static forward resistance at 10 mA = ...Ω

Static reverse resistance at 10 μA = ...Ω

Alternate circuit diagram



Forward bias

Solved examination questions

1. Experimentally find out whether the given diode is made of Germanium or Silicon ?

Conduct the experiment for obtaining the forward bias VI characteristics of the given diode. If the cut in voltage is approximately 0.4 V, it is a Germanium diode. If it is 0.6 V, diode is made of Silicon.

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2. From the forward bias V-I characteristics calculate the reverse saturation current of a diode.

Obtain forward V-I characteristics of the diode experimentally. Note the voltage and current at any point on the graph after the knee voltage and substitute it in the diode equation $I = I_0(e^{V/\eta V_T} - 1)$ where $\eta = 1$ for germanium and 2 for silicon. $V_T = 26$ mV.

Answered viva-voce questions

1. Explain how a potential barrier is created within an open circuited PN junction.

As soon as the PN junction is formed, holes from P-side diffuse into the N-side and electrons from N-side diffuse into the P-side through the junction. Near the junction, N-side becomes positive and P-side becomes negative due to the recombination of diffused carriers. This prevents further entry of electrons and holes to opposite sides. Thus a potential barrier is formed.

2. Define Peak Inverse Voltage of a diode.

It is the maximum reverse voltage that can be applied across a diode.

3. Draw the VI characteristics of an ideal diode. What are its characteristics ?

An ideal diode is one which has zero cut in voltage, zero forward resistance and infinite reverse resistance.

4. What are the sources of the reverse current in a diode ?

Reverse current in a diode is mainly due to the minority carriers. When surrounding temperature increases, the number of minority carriers increases and this results in an increase in reverse current. It is found that the reverse current doubles for every 10°C rise in temperature.

5. Explain diode equation.

Total current in a diode $I = I_0(e^{V/\eta V_T} - 1)$

where I_0 = Reverse current

η = Constant 1 for Ge and 2 for Si at rated current and

V_T = Voltage equivalent of temperature = 26 mV.

6. Compare the V-I characteristics of Germanium and Silicon diodes.

The cut in voltage of the germanium diode is 0.4 V and that of silicon diode is 0.6 V. Reverse current of Ge diode is in the order of μA and that of Si diode is in the order of nA.

7. What is the difference between static and dynamic resistances ?

Static resistance (also known as dc resistance) is the ratio V/I strictly under dc condition. The dynamic resistance (also known as ac resistance) is the ratio of small incremental change in voltage to resulting change in current.

8. What are the transition and diffusion capacitances ?

Transition capacitance (space charge capacitance) exists when a diode is reverse biased and diffusion capacitance (storage capacitance) exists when it is forward biased. Transition capacitance is inversely proportional to reverse voltage across the diode and the diffusion capacitance is proportional to the current through the diode.

9. How LEDs glow in different colours ?

The wavelength of the emitted light is proportional to the energy band gap of the semiconductor. Energy band gap can be varied to change the colour of light by varying the impurity concentration.

10. Give the important electrical characteristics and their typical values of a diode listed on data sheets.

Peak repetitive reverse voltage (V_{RRM}): Maximum voltage that can be repeatedly applied to the diode in reverse bias, sometimes referred to as peak inverse voltage (PIV).

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LAB VIVA		*Academic Year / Semester*	**2022-23 , S4**
Subject name with code	**ECL 202- Analog Circuits And Simulation Lab**	*Branch*	**ECE**
Date	27/06/23		

GAP IN THE SYLLABUS

Experiment name : **DIODE CHARECTERISTICS**

QUESTIONS	*Marks*	*CO*
1. Define Peak Inverse Voltage of a diode? 2. Draw the VI characteristics of an ideal diode .What are its characteristics? 3. Explain diode equation? 4. What is the difference between static and dynamic resistance? 5. Explain photo diode and tunnel diode? 6. What are the typical values of forward and reverse resistance of Si and Ge diodes?	10	1,3

CO - Course Outcome |CO|

CO 1: Design and demonstrate the functioning of basic analog circuits using discrete components.

CO3: Function effectively as an individual and in a team to accomplish the given task.

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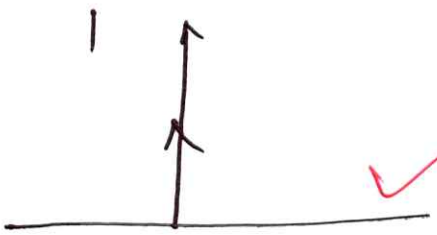
27/6/23

Midhun Krishnan.

1. applied across a diode

2. 

6 | 10

3 $I = I_0 \left(e^{V/\eta V_T} - 1 \right)$

4 Static - DC Resistor
- Works in dc condition

Dynamic - AC resistor

5. —

6 0.7 Si

0.3 Ge

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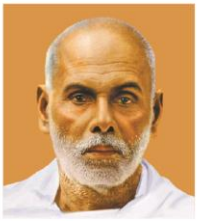

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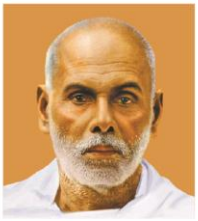

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THEORY

NPTEL Lecture on

"CONTROL SYSTEM BASICS"

On

05th December 2022 @ 9.30 am

Venue: MATLAB, Admin Block

Resource Person: NPTEL video: https://www.youtube.com/watch?v=RcuGxWc0HyQ

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KANNUR

HOD(EEE)

ATTENDANCE SHEET

Topic: NPTEL video on "CONTROL SYSTEM BASICS"

List of Students

REGISTER NUMBER	NAME	SIGNATURE
SNC20EE001	ABHINAV C.	
SNC20EE002	ASWATHI P.P.	
SNC20EE003	HRUDHUL RAGH	

FACULTY IN CHARGE

HoD

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HOD (EEE)

Abhinav C.
SNC20EE001

EET305-SIGNALS AND SYSTEMS

TOPIC: CONTROL SYSETM BASICS

1. A control system in which the control action is somehow dependent on the output is known as

(a) Closed loop system ✓

b) Semi-closed loop system

c) Open loop system

d) None of the above

2. **In closed loop control system, with positive value of feedback gain the overall gain of the system will**

a)Decrease

b)Increase

c)Unaffected

d)Any of the above ✓

3. Which of the following is an open loop control system ?

a)Field controlled dc motor

b)Ward leonard control

c)Metadyne

d)Stroboscope ✓

4. In open loop system,

a)Control action depends on the size of the system

b) Control action depends on the input variables

c) Control action depends on the system variables

d)Control action is independent of the output ✓

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5. -------has tendency to oscillate

a) Open loop system

b) Closed loop system

c) Both (a) and (b)

d) Neither (a) nor (b)

6. A good control system has all the following features except

a) Good stability

b) Slow response

c) Good accuracy

d) Sufficient power handling capacity

7. A closed loop system is distinguished from open loop system by which of the following?

a)Servmechanism

b)Feedback

c)Input pattern

d)Output pattern

8. Which of the following should be done to make an unstable system stable ?

a). The gain of the system should be decreased

b). The gain of the system should be increased

c). The number of poles to the loop transfer function should be increased

d). The number of zeros to the loop transfer function should be increased

9. **The output of a feedback control system must be a function of**

a).Reference and output

b) Reference and input

c).Input and feedback signal

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d)Output and feedback signal

10. **Transfer function of a system is used to calculate which of the following ?**

a).The order of the system

b)The time constant

c).The output for any given input

d).The steady state gain

5/10

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Aswathi P.P.
SNC20EE002

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7/10

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HRUDHUL RAGH
SNE 20EE003

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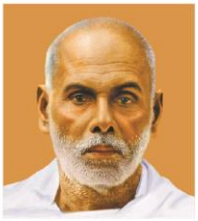

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LAB

One day hands on session on

"AURDINO UNO PROGRAMMING"

On

12th November 2022 @ 2.00 pm

Venue: Microprocessors and Microcontrollers Lab, Admin Block

Dr. LEENA A. V.
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KANNUR

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Resource Person: Mr. Sreeraj T K, Lab In charge EEE Department

ATTENDANCE SHEET

Topic: One day hands on session on "Aurdino Programming"

List of Students

REGISTER NUMBER	NAME	SIGNATURE
SNC20EE001	ABHINAV C	
SNC20EE002	ASWATHI P P	
SNC20EE003	HRIDUL RAGH	

FACULTY IN CHARGE

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Abhinav.C
SNC20EE001

1. What is Arduino?

a) Programming language
b) Image editing software
c) Open-source electronics platform
d) Text editor

4/5

2. How many types of Arduino do we have?
a) 4
b) 8
c) 12
d) 16

3. What language is a typical Arduino code based on?
a) Assembly Code
b) Python
c) Java
d) C/C++

4. What language is the Arduino IDE built on?
a) Java
b) HTML
c) C/C++
d) Python

5. How many analog pins are used in Arduino Mega board?
a) 12
b) 16
c) 8
d) 14

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Aswathi-P.P
SNC20EE002

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-4/5

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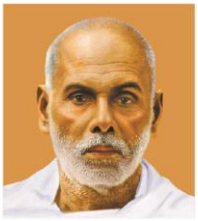

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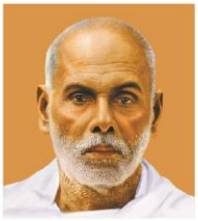

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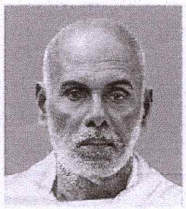

INTERNAL ASSESSMENT TEST MARKS.

S.NO	NAME	MARKS
1	ARJUN SHYLESH	3
2	ASHISH K	3
3	ASHWIN JOHN	4
4	ASWIN BABU M V	3
5	ASWIN P P	2
6	DHEERAJ K V	2
7	KN MUHAMMED MISHAL	3
8	MAJID V V	2
9	MOHAMMED SHAD ABDUL SATHAR	3
10	SOURAG K	4

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HOD ME

Ashish K
S5 ME

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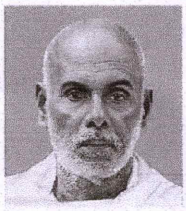

INTERNAL ASSESSMENT TEST

3/5

SURFACE ROUGHNESS MEASUREMENT

1. What is meant by roughness?
a) Minute succession of hills of different height
b) Minute succession of valleys and hills of different height and varied spacing
c) Minute succession of valleys and hills of same height and same gap
d) Minute succession of valleys of different depth

2. Surfaces produced by straight and cylindrical grinding tools tend to create which type of roughness?
a) Regularly spaced but directional roughness
b) Regularly spaced but non directional roughness
c) Irregularly spaced but directional roughness
d) Irregularly spaced but non directional roughness

3. Which of the following is necessary for the complete study of surface roughness?
a) Measurement of all the components of elements
b) Analysis of all the component element
c) Assessment of the effects of combined texture
d) Measurement and analysis of all the components and assessment of combined texture

4. Which of the following is true for measurement of surface roughness?
a) 3 dimensional geometry can be easily measured
b) Direction of measurement is perpendicular to the lay
c) Direction of measurement is parallel to the lay
d) Direction of measurement is parallel to the direction of the predominant surface marking

5. How much a stylus instrument can be magnified to plot or find minute irregularities?
a) 50 times
b) 500 times
c) 5000 times
d) 50,000 times

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Ashwin PP
S5 ME

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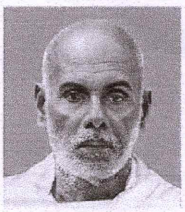

INTERNAL ASSESSMENT TEST

2/5

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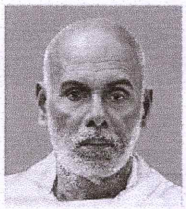

INTERNAL ASSESSMENT TEST

4/5

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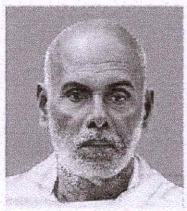

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DEPARTMENT OF MECHANICAL ENGINEERING

GAP IN SYLLABUS

SURFACE ROUGHNESS MEASUREMENT

Introduction:-

With the more precise demands of modern engineering products, the control of surface texture together with dimensional accuracy has become more important. It has been investigated that the surface texture greatly influences the functioning of the machined parts. The properties such as appearance, corrosion resistance, wear resistance, fatigue resistance, lubrication, initial tolerance, ability 'to hold pressure, ,load carrying capacity, noise reduction in case of gears are influenced by the surface texture. Whatever may be the manufacturing process used, it is not possible to produce perfectly smooth surface. The imperfections and irregularities are bound to occur. The manufactured surface always departs from the absolute perfection to some extent. The irregularities on the surface are in the form of succession of hills and valleys varying in height and spacing. These irregularities are usually termed as surface roughness, surface finish, surface texture or surface quality. These irregularities are responsible to a great extent for the appearance of a surface of a component and its suitability for an intended application.

Factors Affecting Surface Roughness:-

The following factors affect the surface roughness:

(1) Vibrations

(2) Material of the workpiece

(3) Type of machining.

(4) Rigidity of the system consisting of machine tool, fixture cutting tool and work

(5) Type, form, material and sharpness of cutting tool

(6) Cutting conditions i.e., feed, speed and depth of cut

(7) Type of coolant used

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Reasons for Controlling Surface Texture:-

(1) To improve the service life of the components

(2) To improve the fatigue resistance

(3) To reduce initial wear of parts

(4) To have a close dimensional tolerance on the parts

(5) To reduce frictional wear

(6) To reduce corrosion by minimizing depth of irregularities

(7) For good appearance

Orders of Geometrical Irregularities:-

As we Know that the material machined by chip removal process can't be finished perfectly due to some departures from ideal conditions as specified by the designer. Due to conditions not being ideal, the surface Produced will have some irregularities, these geometrical irregularities can be classified into four categories. First Order: The irregularities caused by inaccuracies in the machine tool itself are called as first order irregularities. These include:

(1) Irregularities caused due to lack of straightness of guide ways on which the tool most moves.

(2) Surface regularities arising due to deformation of work under the action of cutting forces, and

(3) Due to the weight of the material itself.

Second Order: The irregularities caused due to vibrations of any kind are called second order irregularities.

Third order: Even if the machine were perfect and completely free from vibrations some irregularities are caused by machining itself due to the characteristics of the process.

Fourth Order: The fourth order irregularities include those arising from the rupture of the material during the separation of the chip.

Evaluation of Surface Finish:

A numerical assessment of surface finish can be carried out in a number of ways. These numerical values are obtained with respect to a datum. In practice, the following three methods of evaluating primary texture (roughness) of a surface are used:

(1) Peak to valley height method

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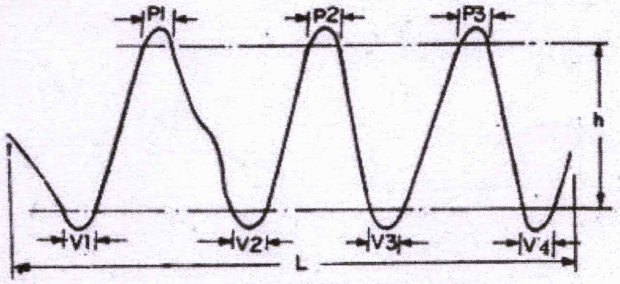
(2) The average roughness

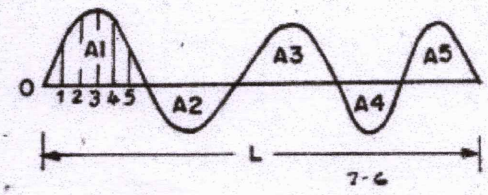
(3) Form factor or bearing curve.

(1) Peak to valley height method: This method is largely used in Germany and Russia. It measures the maximum depth of the surface irregularities over a given sample length, and largest value of the depth is accepted as a measure of roughness. The drawback of this method is that it may read the same *hmax* for two largely different texture. The value obtained would not give a representative assessment of the surface.



Peak to Valley height

To, overcomes this PV (Peak to Valley) height is defined as the distance between a pair of lines running parallel `to the general 'lay' of the trace positioned so that the length lying within the peaks at, the top is 5% of the trace length, and that within the valleys at the bottom is 10% of the trace length. This is represented graphically in Fig. (2) The average roughness: For assessment off average roughness the following three statistical criteria are used: (a) C.L.A Method: In this method, the surface roughness is measured as the average deviation from the nominal surface.



Centre Line Average or Arithmetic Average is defined as the average values of the ordinates from the mean line, regardless of the arithmetic signs of the ordinates

$$\text{C.L.A Value} = \frac{h_1 + h_2 + h_3 + \ldots\ldots h_n}{n} \qquad \ldots(i)$$

Also

$$\text{C.L.A.} = \frac{A_1 + A_2 + A_3 + \ldots\ldots A_n}{L}$$

$$= \frac{\Sigma A}{L} \qquad \ldots(ii)$$

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Measurement of surface finish surfaces texture:

The methods used for ensuring the surface finish can be classified broadly into two groups.

1. Inspection by comparison.

2. Direct instrument measurement

1. Inspection by comparison methods. In these methods, the surface texture is assessed by observation of the surface. These are the methods of qualitative analysis of the surface texture. The texture, e of the surface W be tested is compared with that of a specimen of known roughness ~value and `finished by similar machining processes. Though these methods are rapid, the results are not reliable because they can be misleading if comparison is not made with\the surface produced by similar techniques.

The various methods available for comparison are: (i) Visual Inspection (ii) Touch Inspection (iii) Scratch Inspection (iv) Microscopicc Inspection (v) Surface photographs (vi) Micro-Interferometer (vii) Wallace surface Dynomometer (viii) Reflected Light Intensity.

(i) Visual Inspection: In this method the surface is inspected by naked eye. This method is always likely to be misleading particularly when surfaces with high degree of finish are inspected. It is therefore limited to rougher surfaces.

(ii) Touch Inspection: This method can simply assess which surface is more rough, it cannot give the degree of surface roughness. Secondly, the minute flaws can't be detected. In this method, the finger tip is moved along the surface at a speed of about 25 mm per second and the irregularities as small as 0.0125 mm can be detected. In modified method a tennis ball is rubbed over the surface and surface roughness is judged thereby.

(iii) Scratch Inspection: In this method a softer material like lead, babbit, or plastic is rubbed over the surface to be inspected. The impression of the scratches on the surface produced is then visualised.

(iv) Microscopic Inspection: This is probably the best method for examining the surface texture by comparison. But since, only a small surface can be inspected at a time several readings are required to get an average value. In this method, a master finished surface is placed under the microscope and compared with the surface under inspection. Alternatively, a straight edge is placed on the surface to be inspected and a beam of light projected at about 600 to the work. Thus the shadow is cast into the surface, the scratches are magnified and the surface irregularities can be studied.

(v) Surface photographs: In this method magnified photographs of the surface are taken with different types of illumination to reveal the irregularities. If the vertical illumination is used then defects like irregularities and scratches appear as dark

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spots and flat portion of the surface appears as bright area. In case of 'oblique illumination, reverse is the case. Photographs with different illumination are compared and the result is assessed.

(vi) Micro Interferometer: In this method, an optical flat is placed on the surface to be inspected and illuminated by a monochromatic source of light. Interference bands are studied through a microscope. The scratches in the surface appear as interference lines extending from the dark bands into the bright bands. The depth of the defect is measured in terms of the fraction of the interference bands.

(vii) Wallace Surface Dynamometer: It is a sort of friction meter. It consists of a pendulum in which the testing shoes are damped to a bearing surface and a predetermined spring pressure can be applied. The pendulum is lifted to its initial starting position and allowed to swing over the surface to be tested. If the surface is smooth, then there will be less friction and pendulum swings for a longer period. Thus, the time of swing is a direct measure of surface texture.

(viii) Reflected Light Intensity: In this method a beam of light of known quantity is projected upon the surface. This light is reflected in several directions as beams of lesser intensity and the change in light intensity in different directions is measured by a photocell. The measured intensity changes are already calibrated by means of reading taken from surface of known roughness by some other suitable method.

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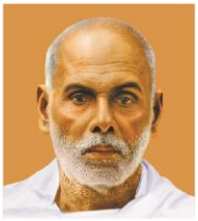

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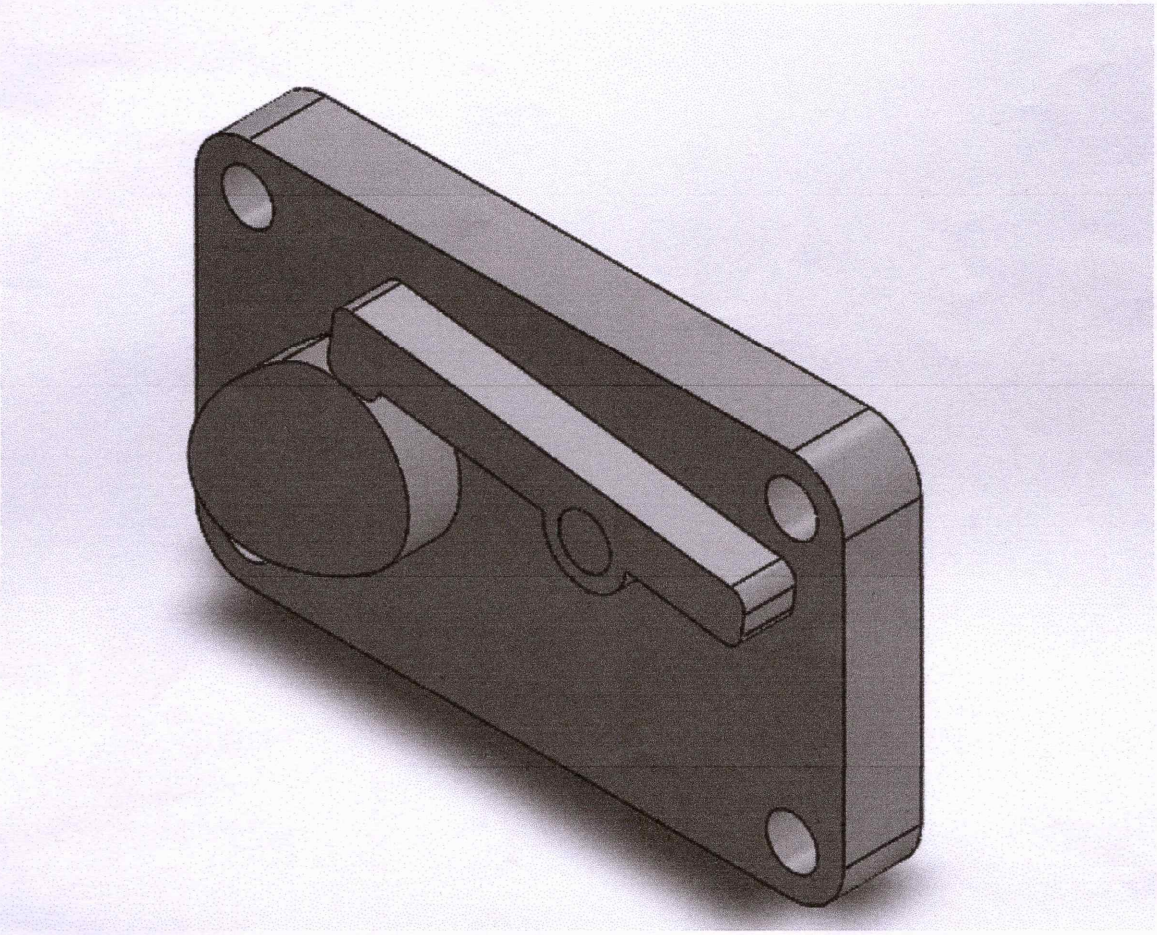
GAP IN SYLLABUS

CAM AND FOLLOWER MOTION STUDY



3D MODELLING OF PARTS

ASSEMBLING OF COMPONENTS BY ASSIGNING MATES

PLACING MOTOR AT CAM SHAFT

ANALYSING MOTION OF CAM AND FOLLOWER.

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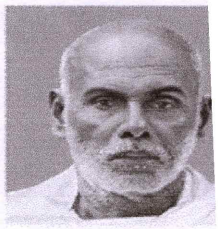

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ASSESMENT FOR GAP IN SYLLUBUS

ROLL NO	NAME OF STUDENT	TOTAL MARKS
1	ARJUN SHYLESH	9
2	ASHISH K K	9
3	ASHWIN JOHN	10
4	ASWIN BABU M V	9
5	ASWIN P P	8
6	DHEERAJ K V	8
7	KN MUHAMMED MISHAL	9
8	MAJID V V	7
9	MOHAMMED SHAD ABDUL SATHAR	10
10	SOURAG K	9

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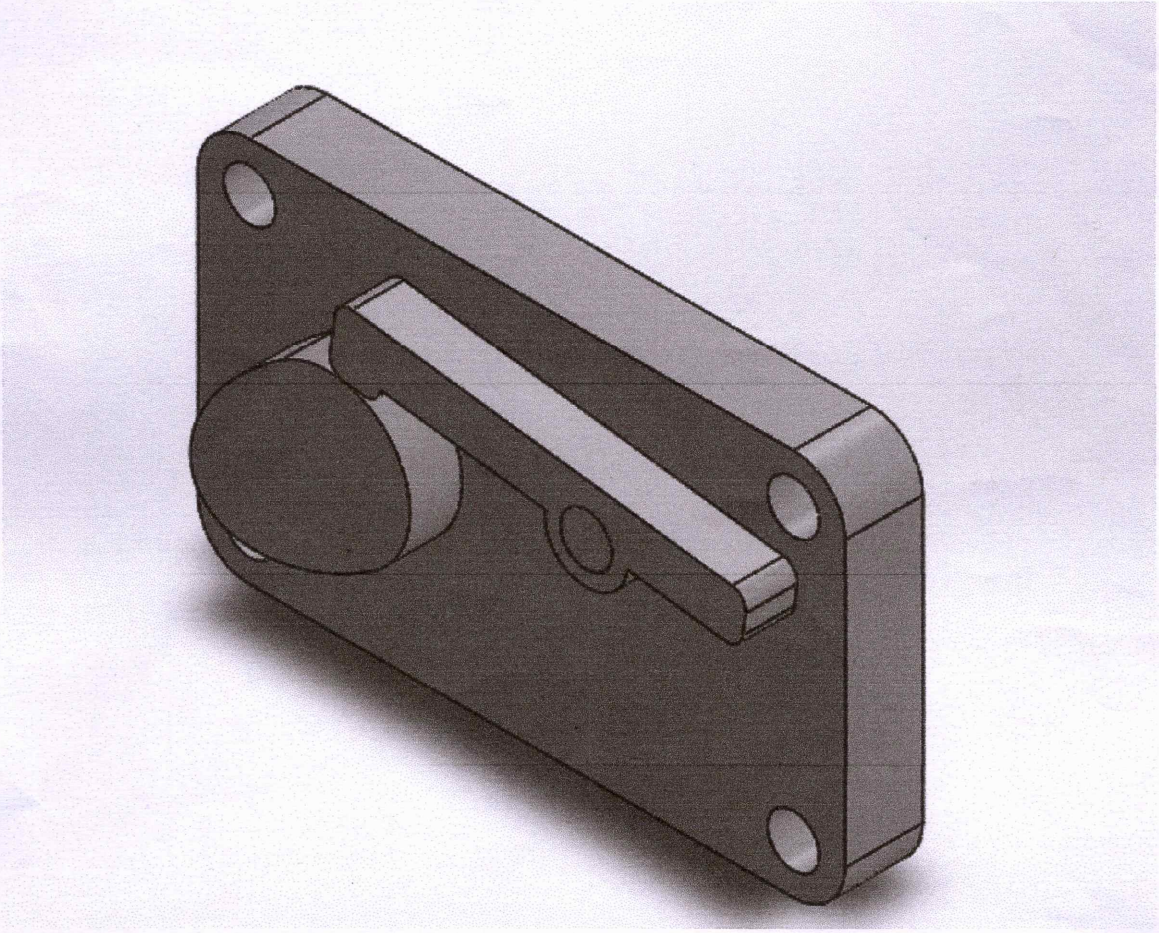

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Aswin John
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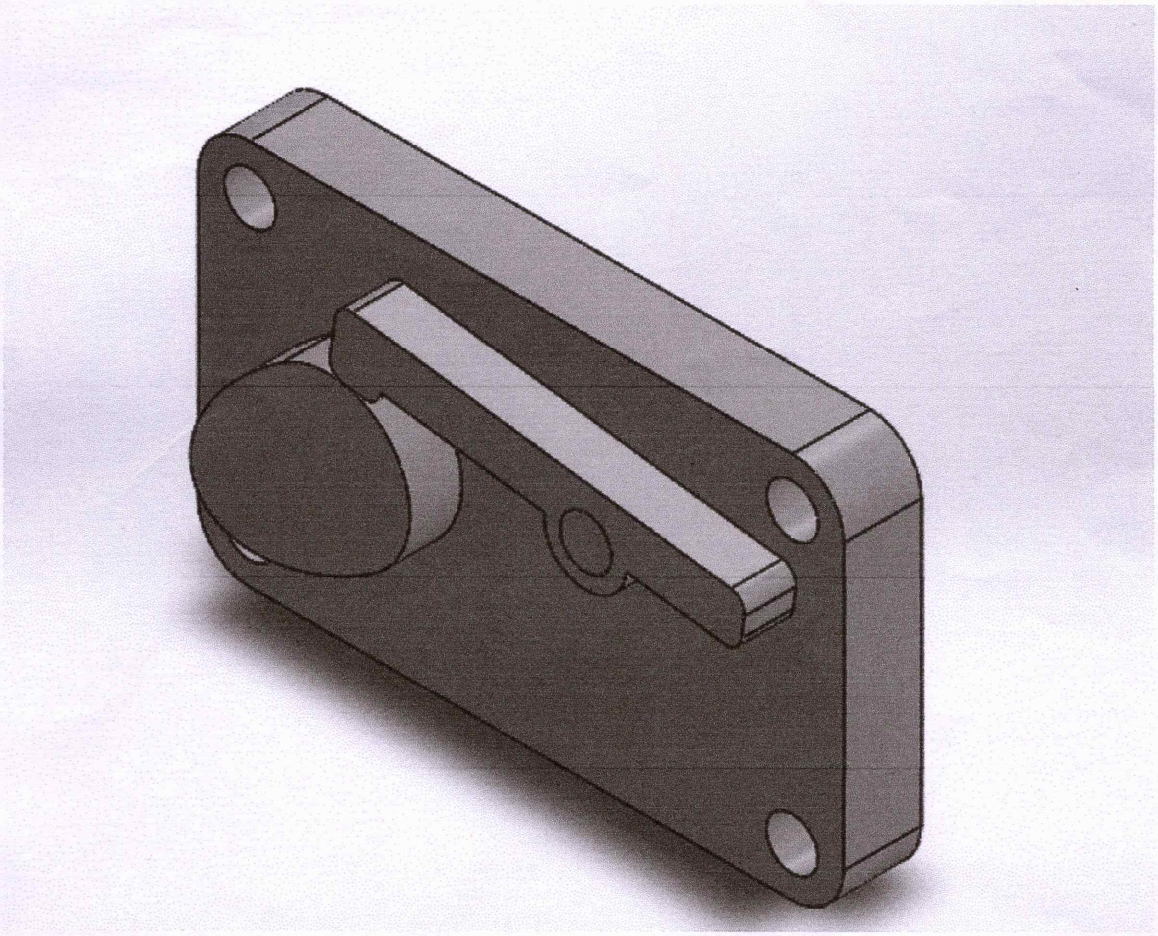

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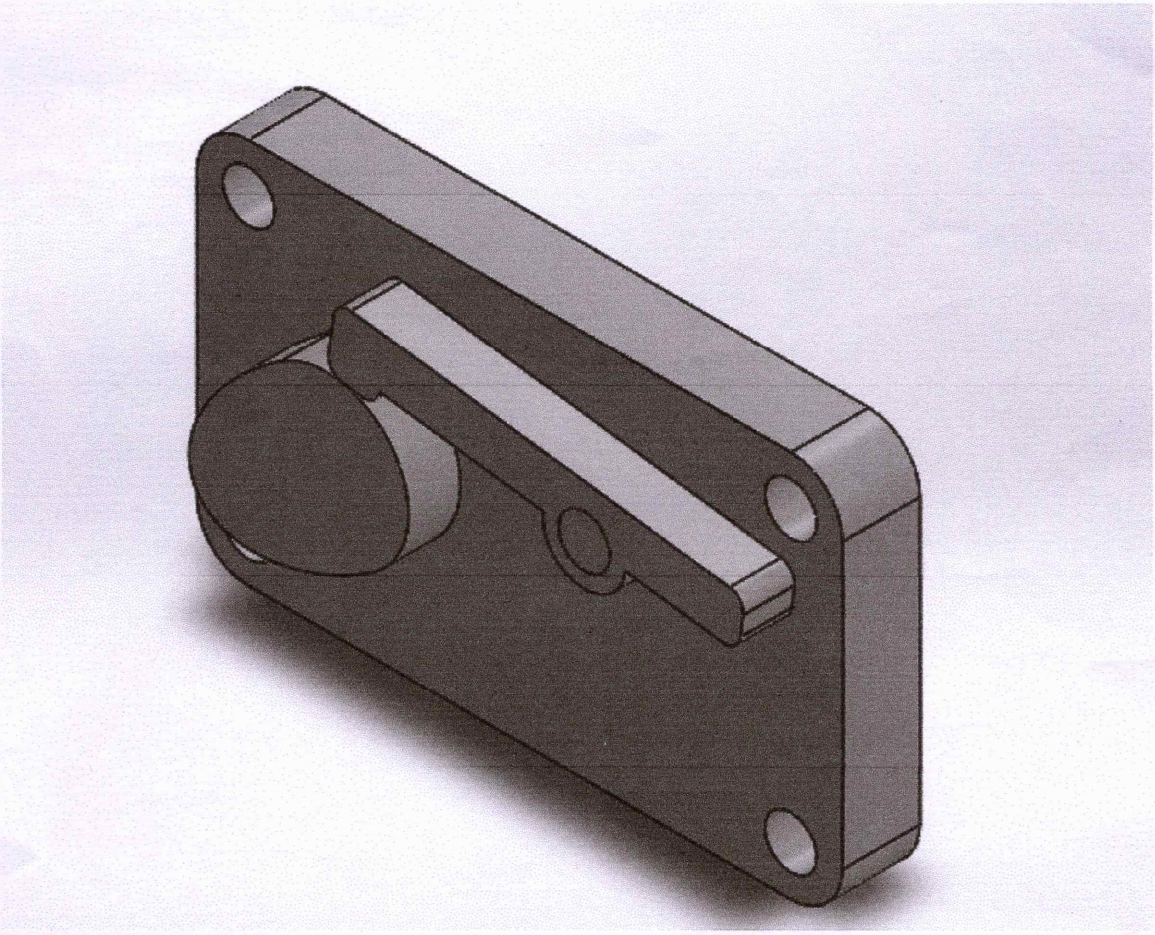

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