प्रज्ञानं ब्रह्म

Manipal
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MANIPAL INSTITUTE OF TECHNOLOGY, MANIPAL 576104
(Constituent College of Manipal University)

KNOWLEDGE IS POWER

SIXTH SEMESTER B.TECH. (IT) DEGREE MAKE UP EXAMINATION, JUNE– 2016
SUBJECT: INTERNET TECHNOLOGY AND APPLICATIONS – ICT 302

TIME: 3 HOURS   **27/06/2016**   **MAX. MARKS: 50**

Instructions to candidates
- Answer any **FIVE FULL** questions.
- Missing data, if any, may be suitably assumed.

1A. Write a program to create an applet to draw rings around mouse click location as shown in Figure Q.1A.
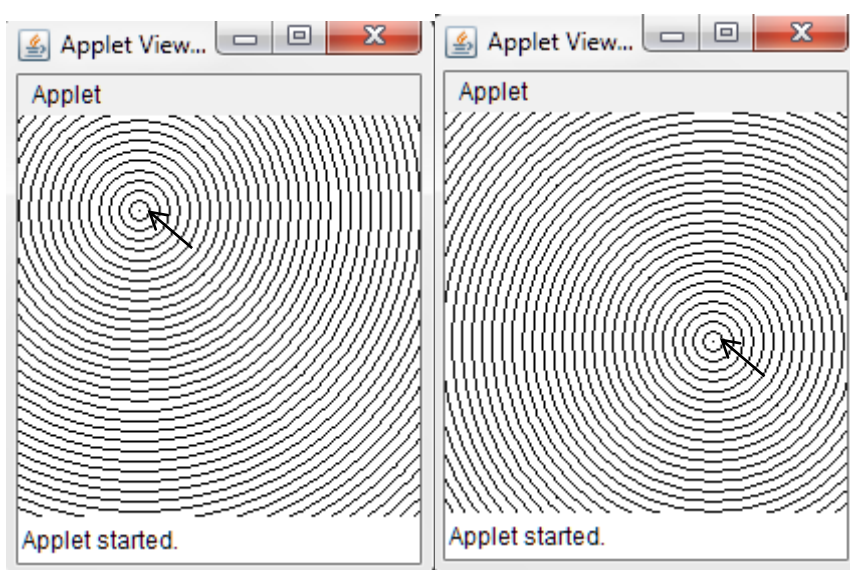

Figure Q.1A

1B. Write a MathML for the following mathematical expression.

$$w = z^{1/3} + \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

1C. Mention any three methods that override generic servlet class with an example for each.
.   (5+3+2)

2A.   Explain with an example the following html/CSS concepts.
      a) Frameset
      b) Nested and Unordered list
      c) Internal Linking in html
      d) Text flow and box model
2B.   Explain with a suitable JavaScript, the concept of all and children collection.
2C.   Explain any four functions which can be used on arrays in Perl with a suitable code and output for each.

(5+3+2)

3A. Write a servlet to read a mobile number and password from a user at the client side and validate the same at the server side using regular expressions and display an HTML page to the client showing whether the mobile number and password which was entered by the user are according to the condition given below:
   a) Mobile number should be a 10 digit number.
   b) Password should start with an alphabet followed by 2 or more digits
   c) Password should end with 2 special characters.
   d) Password length should be minimum 5 and maximum 8.

3B. Write the output of the following Perl program:

```
$search = "Is it IT is the rocking day, The smiling Now it is is ing the time to the rock 2344 5 6 7";
@out1=( $search =~ /\b(\w+)\s(\w+)\s(\2)\b/gi );
if ( $search =~ /(\w+)\s(\w+)\s(\2)/gi ) {
    print( "Output1: @out1\n" );}
@out2 = ( $search =~ / \b (\w+ )\s( t \w+ )\s(t \w+)(\D) \b /gx );
print("Output2:@out2\n");
@out3 = ( $search =~ /\b(\w+)ing\b/g);
print("Output3:@out3\n");
```

3C. Explain the Event used for tracking the mouse in JavaScript with a suitable example.

(5+3+2)

4A. Write a menu driven VBScript to do the following.
   a) Print the fibonacci series upto n terms.
   b) Find the largest of three numbers.

4B. Explain setInterval and setTimeOut functions in DHTML with a suitable example.

4C. Write the output of the following Perl program.

```
sub PrintHash{
  my (%hash) = @_;
  foreach my $key ( keys %hash ){
    my $value = $hash{$key};
    print "$key : $value\n";
  }}
%hash = ('name' => 'Tom', 'age' => 19);
PrintHash(%hash);
```

(5+3+2)

5A. Write a valid markup that validates the following DTD.

```
<?xml version="1.0" "?>
<!DOCTYPE rss[
<!ELEMENT rss (channel)>
<!ATTLIST rss version CDATA #REQUIRED>
<!ELEMENT channel (title | description | link | language | item | rating? | image? | textinput? | copyright? | pubDate? | lastBuildDate? | docs? | managingEditor? | webMaster? | skipHours? | skipDays?)>
<!ELEMENT title (#PCDATA)>
<!ELEMENT description (#PCDATA)>
<!ELEMENT link (#PCDATA)>
```

```
<!ELEMENT image (title | url | link* | width? | height? | description?)>
<!ELEMENT url (#PCDATA)>
<!ELEMENT item (title *| link | description)>
<!ELEMENT textinput (title | description | name | link*)>
<!ELEMENT name (#PCDATA)>
<!ELEMENT rating (#PCDATA)>
<!ELEMENT language (#PCDATA)>
<!ELEMENT width (#PCDATA)>
<!ELEMENT height (#PCDATA)>
<!ELEMENT copyright (#PCDATA)>
<!ELEMENT pubDate (#PCDATA)>
<!ELEMENT lastBuildDate (#PCDATA)>
<!ELEMENT docs (#PCDATA)>
<!ELEMENT managingEditor (#PCDATA)>
<!ELEMENT webMaster (#PCDATA)>
<!ELEMENT hour (#PCDATA)>
<!ELEMENT day (#PCDATA)>
<!ELEMENT skipHours (hour )>
<!ELEMENT skipDays (day )> ]>
```

5B. What is the difference between internet and intranet? What are the advantages of internet?

5C. Write the use of GraphicsEnvironment class in applets with a suitable example.

(5+3+2)

6A. Write a Javascript that reads a five-letter word from the user and produces all possible three letter words that can be derived from the letters of the five-letter word.

6B. Explain the significance of SOAP.

6C. Write the XPath expression for the given xml to select the following elements.
   a) Selects the title of the first book
   b) selects all the price nodes with a price higher than 35

   book.xml
```
<?xml version="1.0" encoding="UTF-8"?>
<bookstore>
<book category="COOKING">
  <title lang="en">Everyday Italian</title>
  <author>Giada De Laurentiis</author>
  <year>2005</year>
  <price>30.00</price>
</book>
<book category="CHILDREN">
  <title lang="en">Harry Potter</title>
  <author>J K. Rowling</author>
  <year>2005</year>
  <price>29.99</price>
</book>
</bookstore>.
```
(5+3+2)