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Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  
**SIXTH SEMESTER B.TECH DEGREE EXAMINATION(S), DECEMBER 2019**

**Course Code: CS368**

**Course Name: WEB TECHNOLOGIES**

Max. Marks: 100

Duration: 3 Hours

**PART A**

*Answer all questions, each carries 3 marks.*

Marks

- 1 Differentiate between block tags and inline tags. Which tag preserves the white spaces in its content? Illustrate with suitable examples. (3)
- 2 What is a MIME type? Give examples. Why should MIME type information be essentially included in HTTP responses? (3)
- 3 Write the equivalent HTML code to implement the following in a web page: (3)
  - (i) An image titled "birds.jpg" with a height of 100 pixels and width of 200 pixels. If the image cannot be accessed, a message "No image available" should be displayed
  - (ii) A hyperlink to the URL "www.mysite.com/birds.jpg". The hyperlink should have the label "Click Here".
- 4 Mention any three HTTP methods. Provide a brief description about the functionality of each. (3)

**PART B**

*Answer any two full questions, each carries 9 marks.*

- 5 a) What is the utility of Common Gateway Interface (CGI) in the web? Describe its method of operation. (5)  
b) Write down any four HTML tags and their purpose with suitable examples. What are tag attributes? (4)
- 6 a) What is the difference between radio buttons and checkboxes when implemented using HTML? Write HTML code to implement a form which has the following elements: (5)
  - i. A textbox which can accept a maximum of 25 characters.
  - ii. Three radio buttons.
  - iii. A selection list containing four items, two which are always visible.
  - iv. A submit button, clicking on which will prompt the browser to send the form

data to the server "http://responses.mysite.com" using "POST" method.

You can use any text of your choice to label the form elements.

- b) Write brief notes on the method of operation of web servers. What is stored in the document root and server root folders of a web server? (4)
- 7 a) Write down the general format of an HTTP request and an HTTP response. What is the purpose of the following HTTP headers? Also, identify whether they are included with an HTTP header/response or both. (4)
- i. host ii. last-modified
- b) Differentiate between "rowspan" and "colspan" table attributes. Write HTML code to create a table whose structure is as below: (5)


Insert any text of your choice in the table cells. The first row is considered to be containing a heading. The background colour for the table should be red, and the text in the cells should all be centre aligned.

### PART C

*Answer all questions, each carries 3 marks.*

- 8 Differentiate between the action of span and div tags with suitable examples. (3)
- 9 List three methods for creating an array object in JavaScript. What function does the array methods join() and slice() perform? (3)
- 10 Write CSS style rules to implement the following in a web page: (3)
- a. to display the content of hyperlinks with yellow background colour and in italics
- b. to display the contents of unordered lists in bold and in Arial font
- c. to display a background image titled "birds.jpg" with no tiling.
- 11 What is meant by DOM? How is it useful for JavaScript scripts? (3)

### PART D

*Answer any two full questions, each carries 9 marks.*

- 12 a) Discuss the various CSS style sheet levels with suitable examples. How are conflicts resolved when multiple style rules apply to a single web page element? (4)
- b) How are event handlers registered in JavaScript? Write the code for an HTML document with embedded JavaScript scripts, which initially displays a paragraph with text "Welcome" and a button titled "Click". When the button is clicked, the (5)



message "Hello from JavaScript" in bold should replace the paragraph text.

- 13 a) Distinguish between descendant selectors and child selectors in CSS. If there is a style rule given by `body p { color : red; font-family : courier; }` and another style rule `body > p { color : green; }`, what styles will apply to the content of a paragraph in the web page body? (4)
- b) Give a brief overview of the syntax used in JQuery with suitable examples. List some of the selector types used in JQuery. (5)
- 14 a) What are class selectors in CSS? Suppose that it is required to display the text content of p tags in two different styles depending on the context. (5)
- Style 1 – text should be displayed in blue colour, right aligned, underlined, with font style of italics and spacing between the words of text set to 2 cm.
- Style 2 – text should be displayed with a background colour of yellow, having a dashed, blue colour border, and with a padding of 1.5 cm
- Write the equivalent CSS style rules.
- b) What are the output statements provided by JavaScript? Write embedded JavaScript code which displays a dialog box that prompts the user to enter a string. The script should then concatenate the string after the string "Hello " and then print the result 5 times in italics one below the other in the web page. (4)

### PART E

*Answer any four full questions, each carries 10 marks.*

- 15 a) What is the function of cookies? Explain why session tracking is sometimes a better alternative to using cookies. (5)
- b) How is XML different from HTML? What is meant by the term namespace in the context of XML? (5)
- 16 a) During the process of fetching a web page from a web server to a client browser, at what point does an embedded PHP script get executed? Can a client see the PHP script in the retrieved page? How does this differ from JavaScript script execution? (3)
- b) What are the two modes that the PHP processor operates in? Explain. (2)
- c) What is meant by a DTD? Create a DTD for a catalogue of cars, where each car element has the child elements make, model, year, colour, engine, doors. The engine element has the child elements no\_of\_cylinders and fuel\_type. (5)
- 17 a) How is the type of a variable determined in PHP? Distinguish between bound (3)

- and unbound variables. How can a variable be tested to check whether it is bound?
- b) What is the purpose of the explode() and implode() functions in PHP? Illustrate with suitable examples. (2)
- c) What are the benefits of XML schema over DTDs? Discuss, with examples, the various user defined data types permissible for XML schemas. (5)
- 18 a) Write an embedded PHP script which displays the factorial of all numbers from 1 to 10 in a table in the web page. The factorial should be calculated and returned from a function. The table headings should be "Number" and "Factorial". (5)
- b) Write notes on entities in XML. State the format for declaring external entities (text and binary) in a DTD. (5)
- 19 a) What are associative arrays? How are associative arrays declared in PHP? Illustrate with an example. (2)
- b) Briefly describe, with suitable examples, the various methods for iterating over the contents of a PHP array. (3)
- c) What is the purpose of XSLT style sheets? Suppose that an XML document contains a root element named `students` which has a child element `student`. Each `student` element has the child elements `name`, `roll_no` and `branch`. Suppose that there are 5 instances of the `student` element. Write an XSLT style sheet to display the student data as an HTML document. (5)
- 20 a) What is the purpose of the implicit arrays `$_POST` and `$_GET` in PHP? Consider that a web page displays a form containing two text boxes (named `num1` and `num2`), where the user enters numeric data. Write a PHP script which collects this form data, finds the sum, difference and the product of the two numbers and then displays the same with suitable messages. Assume that the script is to be embedded in the web page specified by the action attribute of the form and that the method used when the form is submitted is GET. (5)
- b) Can CSS be used to display an XML document? Illustrate with an example. (5)

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