



MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)
University Examinations for 2015/2016 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

**FIRST SEMESTER EXAMINATION FOR DEGREE IN BACHELOR OF SCIENCE
IN MATHEMATICS AND COMPUTER SCIENCE**

SCO 207: WEB DEVELOPMENT TECHNOLOGIES

Date: 3/8/2016

Time: 2:00 – 4:00 PM

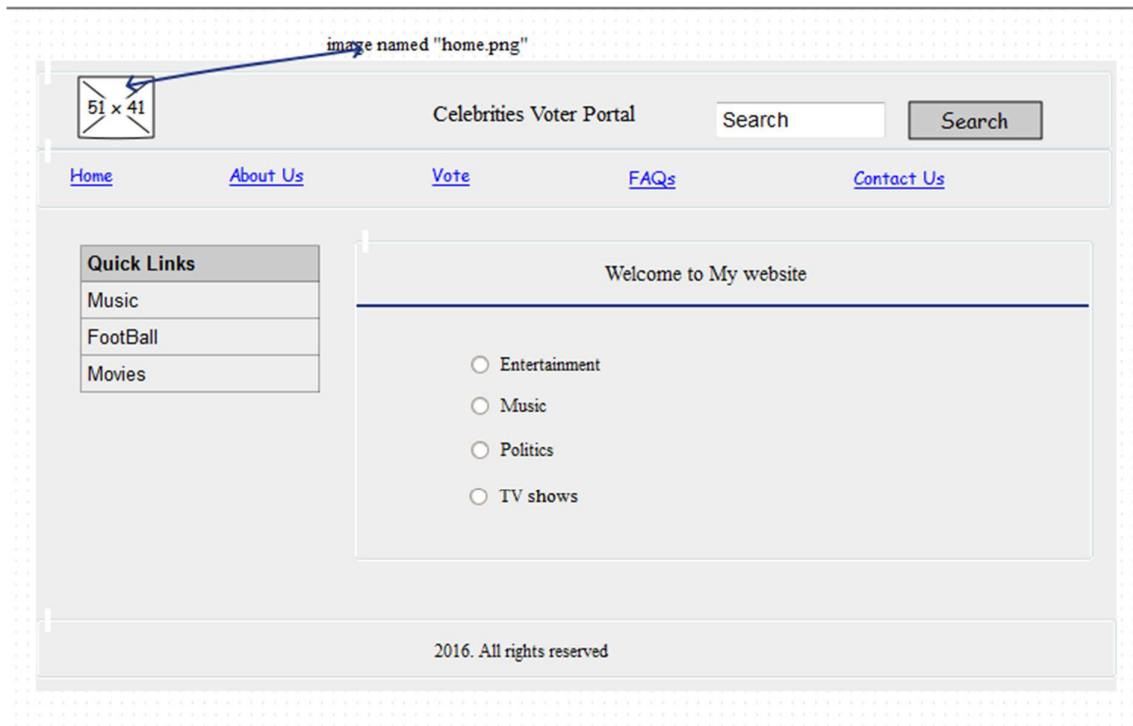
INSTRUCTIONS

Answer **question ONE** and **any other TWO** questions

QUESTION ONE

- a. Explain the role played by the following header tags for an HTML document. For each, use a valid example to demonstrate how the tag works
 - i. <meta> tag (2 marks)
 - ii. <script> tag (2 marks)
 - iii. <style> tag (2 marks)
- b. Write a CSS code to apply the following styles to the body element of an HTML document
 - i. Align text to justify
 - ii. Insert background image known as “Nairobi.png”
 - iii. Change the text color to gold(4 marks)
- c. Differentiate the role played by the following SMTP mail protocols
 - i. IAMP and POP (2 marks)
 - ii. MIME and SMTP (2 marks)
- d. Explain the role played by CSS during web page development (1 mark)

- e. An upcoming event wish to use a web portal to allow end users vote for upcoming celebrities. You have been asked to design an index page for the portal with the following Layout



Required:

Using HTML DIVS and CSS, write appropriate codes to render the above HTML page on a web browser (15 marks)

QUESTION TWO

- a) In context of web development, differentiate between intranets and extranets (4 marks)
- b) Write appropriate HTML code to generate the following table on a web browser program (6 marks)

Product catalogue

Product code	Product name	Price (Ksh.)	Quantity
P001	Slumber Bed	40,000	20
P002	Samsung TV 32"	33,500	40
P003	LG smart Fridge	45,200	30
Totals (in catalogue)		118,700	90

c) With the reference to CSS, discuss any two types of selectors that can be used to “find” HTML elements. Use an example for each to illustrate how it can be used.

(6 marks)

d) Critically discuss any two challenges facing the internet body

(4 marks)

QUESTION THREE

a) Write appropriate HTML code to generate the following output on a web browser application (7 marks)

Product categories

1. Electronics
 - TVs and radio
 - Laptops, tablets and PCs
 - Home Appliances
2. Automobiles
 - Sports cars
 - Saloon cars
 - Trucks
3. Clothing
 - Men
 - Women
 - Kids

b) Write appropriate HTML5 code to

- i. Render a video named “movie.mp4” on a web browser program. The video should include controls such as play, rewind, pause e.t.c) (3 marks)
- ii. Produce a drop down of numeric numbers starting from “2” and incremented by a value of 2. The user can scroll until numeric “50” (2 marks)

c) Write appropriate HTML code to render the following web page on a web browser application program (8 marks)

Create Account

First Name First Name

Select Gender

☐ Female

☐ Male

Email Address

Postal Address

Password

Confirm Password

How did you know about Us?

☐ Television ☐ Radio

☐ Social Media ☐ Others

QUESTION FOUR

- There are three ways of inserting CSS to an HTML document. Critically discuss any two of those methods indicating when each is most appropriate to be used. For each, provide a valid example demonstrating how the CSS rule can be inserted. (8 marks)
- Critically discuss any two approaches of integrating databases to the web environment (4 marks)
- Write appropriate HTML code to link an HTML file named “index.html” (1 mark)
- Write appropriate HTML code to produce the following page on a web browser program (3 marks)

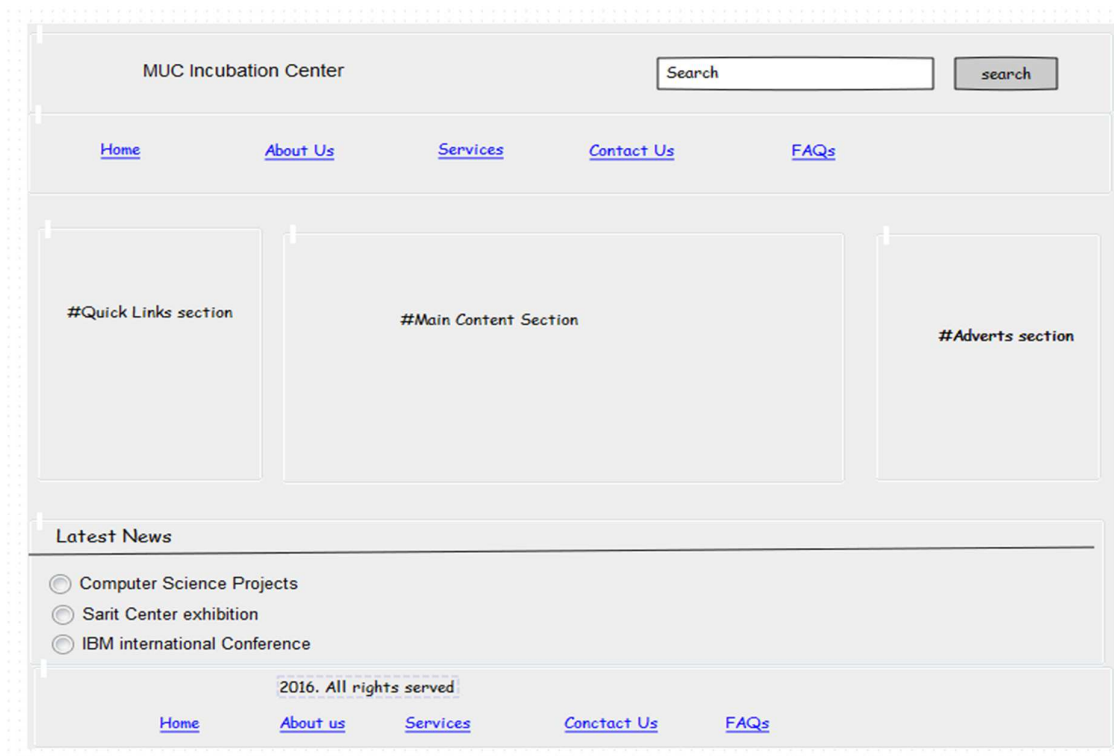


A login form titled "Free WiFi Connection". It contains a "Login" label, an "Email" field with a placeholder "Email Address", a "Password" field with a placeholder "Password", and two buttons labeled "Login" and "Cancel".

- e) With valid examples, discuss the two HTML tags that can be used to mark quotation in a text (4 marks)

QUESTION FIVE

- a. Machakos University College has established an incubation center. As a web application programmer, you have been approached to design a website for them. The following is a proposed index page layout for your implementation



A proposed index page layout for the MUC Incubation Center. The layout includes a header with the site name "MUC Incubation Center" and a search bar. Below the header is a navigation menu with links: [Home](#), [About Us](#), [Services](#), [Contact Us](#), and [FAQs](#). The main content area is divided into three sections: "#Quick Links section", "#Main Content Section", and "#Adverts section". Below these sections is a "Latest News" section with a list of news items: "Computer Science Projects", "Sarit Center exhibition", and "IBM international Conference". The footer contains the text "2016. All rights served." and a repeat of the navigation menu links: [Home](#), [About us](#), [Services](#), [Contact Us](#), and [FAQs](#).

Required:

Using DIVS for layout and external CSS to define the styles of the HTML elements, write appropriate codes to implement the web page. You may assume the dimensions of the various elements. (20 marks)