



MACHAKOS UNIVERSITY

University Examinations for 2020/2021

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

SECOND YEAR FIRST SEMSTER EXAMINATION FOR

BACHELOR OF SCIENCE (STATISTICS AND PROGRAMMING)

SCS 209: INTERNET TECHNOLOGIES

DATE: 10/8/2021

TIME: 8:30 – 10:30 AM

INSTRUCTIONS

This paper consists of FIVE questions

*Answer **question one** and other **two questions** in this paper*

QUESTION ONE (COMPULSORY) (30 MARKS)

- a) Explain the following (6 marks)
 - i) Throughput
 - ii) Telnet
 - iii) Gopher
- b) Discuss ONE advantage and ONE disadvantage of the following hosting options: - (4 marks)
 - i) Hosting your own site
 - ii) Dedicated server
- c) Using an example, explain the THREE major components of a URL (3 marks)
- d) Explain the role of Interface message process in a computer network (3 marks)
- e) Explain what happens if a user tries to access a page that does not exist on the server (4 marks)
- f) After a HTTP server receives a request, it attempts to process the request. List FOUR (4) types of server responses. (4 marks)
- g) Describe THREE reasons why Apache is often preferred for Web server hosting. (6 marks)

QUESTION TWO (20 MARKS)

- a) Describe TWO types of audio files outlining their similarities and differences. (6 marks)
- b) Explain THREE major considerations that should be made when choosing a web host. (4 marks)
- c) Differentiate between *incremental* and *full back up*. (4 marks)
- d) Write a HTML code to insert a picture in a web page and set width and height properties (4 marks)

QUESTION THREE (20 MARKS)

- a) Distinguish between ASCII Text Files and Binary Files (4 marks)
- b) State the most popular methods that a web administrator would use to upload files to their website (4 marks)
- c) One of your clients has asked you to optimize their website inorder to increase their sales. Describe the link building techniques you may use to optimize their website. (6 marks)
- d) Describe the methods used to perform the following (6 marks)
 - i) Saving the whole page
 - ii) Saving specific information on the web page
 - iii) Saving images

QUESTION FOUR (20 MARKS)

- a) Internet as an application in ABC Company development platform emerged rapidly from obscurity to the dominant position. Over the brief life of the internet, www web applications have grown in prominence and capability. Each successive wave of client and web server technology has upped the ante on the previous generation, increasing capability, integration and responsiveness. Web applications have come a long way from the first hard coded unchanging web pages and web server scripts. While incremental technology changes were being added to make more powerful, dynamics and back end integrated applications, the user demands and expectations placed on web applications continued to push ahead at an even faster pace continually exceeding the capabilities of the underlying technologies. Results from e-consumer survey, for example found that 6% of Western world respondents agreed that it's difficult to navigate and find products on the internet and more than 60% were discouraged by the "bad" shopping experience

when buying products online. It concluded that in order to increase the share of internet buyers

in the population, navigation and the experience on most shopping sites should be made more user friendly and easy to use. This is only one example and can perhaps be considered the tip of an iceberg. Additional research points to the challenges of searching and of finding information within both corporate portals and retail sales.

- i. From the above case study, discuss some of the complexity that ABC Company might face due to internet applications in their development. (10 marks)
 - ii. Explain how ABC company can link some of their internet frames to each other in their website. (5 marks)
- b) Write a HTML code to output the following (5 marks)

Days of the week

Mon

Tue

Wed

QUESTION FIVE (20 MARKS)

- a) Explain the THREE parts to each HTTP request line (6 marks)
- b) Differentiate between attributes and elements as used in HTML. Give example of each. (4 marks)
- c) Explain the meaning and functions of each of the following internet protocols (4 marks)
 - i) TCP
 - ii) IP
 - iii) SMTP
 - iv) FTP
- d) Describe THREE methods through which address resolution may be achieved (6 marks)