

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

FOURTH YEAR SEMESTER ONE EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN APPLIED COMPUTER SCIENCE

ACMP 488: E-SYSTEMS (e-COMMERCE)

STREAMS: BSC (COMPUTER SCIENCE)

TIME: 2 HOURS

DAY/DATE: TUESDAY 11/12/2018

2.30 P.M. – 4.30 P.M.

CANDIDATE INSTRUCTIONS

- Answer **all questions** in section A and any other **two questions** from section B.
- No Reference Material is allowed in the exam Room.
- Write on Both sides of the answer sheet.
- All Mobile phones should be switched off in the exam room.
- Write legibly.

SECTION A (COMPULSORY)

QUESTION 1 (COMPULSORY) [30 MARKS]

- a) Explain what java servlets are; hence write an applet that requests you to enter first-name then echo HELLO *ENTERED-NAME*.
(6 marks)
- b) Outline the steps of downloading and installation of Apache TOMCAT
(4 marks)
- c) Using an example in each case, explain FIVE types of E-commerce
(5 marks)
- d) Explain FIVE primary functions of cryptography in e-commerce sites
(5 marks)
- e) Ken wanted to develop an online shopping website. Explain SIX items he should include in the website, to enable the online shopping.
(6 marks)

- f) Outline FOUR electronic data interchange standards, giving an example of its application area or region
(4 marks)

SECTION B (Answer two question from this section)

QUESTION 2 [20 MARKS]

- a) Outline FOUR characteristics of relational databases
(4 marks)
- b) Write a java servlet that prints the following login window (do not include the posting script)
(6 marks)



Welcome! Please enter your Name
and Password to log in.

Name:

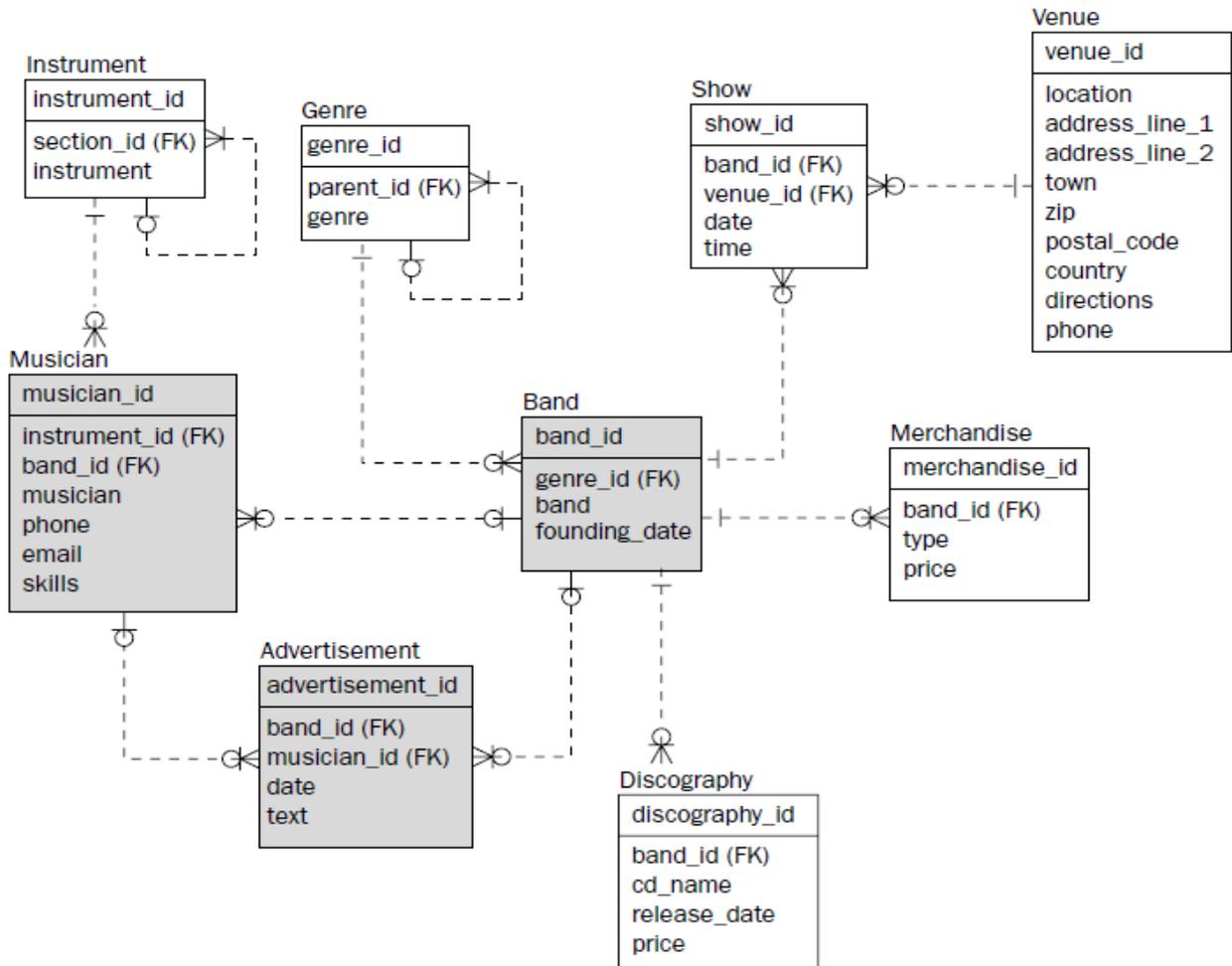
Password:

OK

- c) Write a java server page script for displaying Current Date and Time
(5 marks)
- d) Explain FIVE categories of data types used in oracle databases
(5 marks)

QUESTION 3 [20 MARKS]

- a) A student developed a database model below, which was to be used to develop a certain musical band database.



- i) Explain FOUR SQL constraints that one would use in writing the SQL code of the above database model, clearly indicating where they would appear. (4 marks)
- ii) Write SQL code for developing the database model above (16 marks)

QUESTION 4 [20 MARKS]

- a) With reference to RSA encryption, answer the following questions.
 - i) Outline the steps of RSA encryption (4 marks)
 - ii) Write the RSA decryption formula (2 marks)
 - iii) Assuming alphabets are 26, and are numbered such that A=1, B=2 and Z=26. Use RSA to encrypt and decrypt the word BAD. (5 marks)
- b) A certain SQL database GOODS has table PRODUCT. The PRODUCT had three fields; product_ID, product_Name and Product_Price. Write a JDBC to select the fields product_Name and Product_Price only (9 marks)

QUESTION 5 [20 MARKS]

- a) Peter was tasked with a book store to develop for them an online selling platform for their books.
- i) Draw a front end (user) activity flow diagram
(4 marks)
 - ii) Draw a back end (administrator) activity flow diagram
(5 marks)
 - iii) Using an example in online book selling platform, differentiate between data concurrency vs data consistence
(5 marks)
- b) With reference to SSL answer the following questions
- i) What is an SSL (2 marks)
 - ii) Explain TWO benefits of using SSL in e-commerce websites
(2 marks)
 - iii) Explain TWO conditions you would consider for selecting an SSL for your e-commerce website
(2 marks)
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