

MASTER IN MULTIMEDIA DEVELOPMENT EXAMINATION

(First Year, Second Semester, 2018)

Multimedia Authoring for Handheld Devices

Time: Three hours

Full Marks: 100

Answer any Five questions

- 1 a) Write the code for a WML program named *test.wml* that will display a welcome message for 5 seconds. After 5 seconds have elapsed, it will automatically redirect to another file named *test2.wml* and render its' contents. Also write sample code for this file *test2.wml* which will consist of a form with an input box, an image and a hyperlink. 6
- b) Write a WML program consisting of a deck having two cards. The first card displays a list of available browsers such as Opera, Chrome, Firefox, Microsoft Edge, from which one option can be selected. 6
- On selecting one of the available options, user will be redirected to a second card that displays the message:
 "You selected the browser"
 where is the browser option selected from the first card 2
- From this example, explain how state can be maintained across multiple cards in a deck. 2
- c) Describe the following WML commands/tasks/events with examples (any two): 3+3
 i) NOOP ii) Prev iii) Refresh iv) onEvent
- 2 a) What are the following methods in ActionScript used for? (Attempt any four) 12
 i) fscommand2
 ii) setRGB
 iii) getURL
 iv) duplicateMovieClip
 v) hitTest
 vi) loadVariables
- Illustrate with small examples/code snippets
- b) Write code in flashlite to randomly place a movie clip on the screen, and then enable user to move this movie clip up, down, left and right on pressing the up, down, left and right navigation keys respectively 8
- 3 a) Describe the layered architecture of WAP with a diagram, comparing its protocol 15

- stack with the internet protocol stack. Explain the function of each layer briefly.
- 3 b) What are the functions of a WAP gateway? 5
- 4 a) What are the benefits of using GPRS in addition to GSM? How does GPRS compare with GSM in terms of data rate, billing and type of connection? 6
- b) What are the changes to GSM architecture / additional network elements required in order to support GPRS? Explain the functionality of any two such additional elements that are specific to providing GPRS. 8
- c) Explain the state model of GPRS Mobile Stations. 6
- 5 a) Describe any three RTSP methods briefly. 6
- b) What are the basic requirements of real time multimedia applications? What are the limitations of using TCP for such applications? 5+3
- c) Suppose a video stream is being transmitted over a network using RTP, with the following specifications: 6
 25 frames/sec, 1920*1080 resolution, 3 bytes per pixel, 100X compression
 Assuming an MTU for the network as 1500 bytes, and size of the IP/UDP/RTP headers as 20, 8 and 12 bytes respectively, what is the optimal rate at which the RTP packets are transmitted?
- 6 a) What is "out of band" signalling? What are the advantages of using out of band signalling? Name one protocol which uses this form of signaling. 2+3+1
- b) Briefly describe the function of the signalling elements SSP, STP & SCP in SS7 architecture. Explain the process of basic call set up in SS7 using a diagram illustrating the basic signalling architecture. 14
- 7 a) Explain the working of MMS. Briefly explain the functions of the elements involved, starting from the origin of the message till the acknowledgement of its delivery. 14
- b) What are the challenges of MMS Technology? 6
- 8 Attempt **any two** from the questions below: 10* 2
- a) Mobility management (in the context of GPRS or GSM)
- b) Call routing in GSM network from fixed phone to mobile
- c) SIP Messages and methods
- d) Phases and Protocols of a H.323 Call
- e) Creating & using a key catcher button in Flashlite