

ANNA UNIVERSITY CHENNAI
B.E. (FULL TIME) DEGREE END SEMESTER EXAMINATIONS, April/May 2012
BRANCH: Computer Science and Engineering
VI SEMESTER – REGULATIONS 2008
CS 9352 – Mobile and Pervasive Computing

38

Time: Three hours

Max.Marks:100

Answer All Questions
Part – A (10X2 = 20 Marks)

1. Write a short note on modulation, diversity and multiple access.
2. What are the types of Handovers? How do we classify the handovers on the basis of decision making?
3. State the three function of PHY 802.11 layer.
4. What are the differences between a Bluetooth and Wi-Fi? State the areas of application of Bluetooth.
5. Discuss briefly about Mobile IP registration processes.
6. What is the basic purpose of DHCP? Name the entities of DHCP.
7. Is TCP the appropriate protocol model for wireless networks? List the traditional limitations TCP in wireless networks.
8. Where does WAP Fit in the Wireless Computing Application? State the goals of WAP stack.
9. Define pervasive computing. Mention the four major kinds of roles of pervasive computing web applications
10. Write a short note on context aware computing.

PART –B (16 x 5 = 80 marks)

- 11.a.
- (i) How is localization, location update, roaming etc. done in GSM and reflected in the databases? What are typical roaming scenarios? Explain. (8)
 - (ii) Describe GPRS transmission plane protocol reference model. (8)
- 12.a. Discuss elaborately about the IEEE 802.11 protocol architecture and management with neat block diagram. (16)
- (OR)
12. b. Describe Bluetooth architecture and its protocol stack in detail. (16)
- 13.a. Explain how tunneling works in general and specifically for mobile IP using IP-in-IP minimal, and generic routing encapsulation, respectively. Discuss the advantages and disadvantages of these three methods. (16)
- (OR)
- 13.b. How does dynamic source routing algorithm handle routing? What is the motivation behind dynamic source routing compared to other routing algorithm from fixed networks? Explain them clearly. (16)
- 14.a.
- (i) Explain the various components of WAP architecture in detail. (10)
 - (ii) Write a WML script to convert temperature from Celsius to Fahrenheit on mobile phone. (6)
- (OR)
- 14.b. Compare and discuss elaborately about the various approaches of wireless mobile TCP in detail. (16)

15.a. Explain in detail about the pervasive applications architecture with MVC pattern. (16)

(OR)

15.b. Describe the following

* Windows CE

(8)

* *Pervasive Devices*

(8)

14. (b) ii. Allocate and assign three registers to the variables in the following code using Graph Coloring

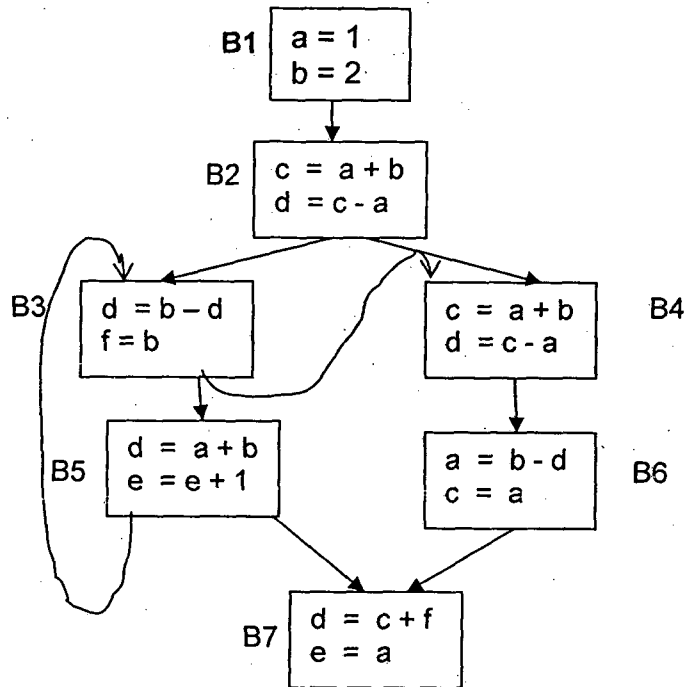
```

a := read();
b := read();
c := read();
a := a + b + c;
if (a < 10) {
    d := c + 8;
    write(c); }
else if (a < 20) {
    e := 10;
    d := e + a;
    write(e); }
else {
    f := 12;
    d := f + a;
    write(f); }
write(d);

```

(8)

15. (a) i. Apply any four optimization techniques to the following block and derive the optimal block. Explain each optimization in detail. (8)



15. (a) ii. Compute the Live variables in and out of the above blocks. (8)

OR

15. (b) i. Discuss Peephole optimization in detail (8)

15. (b) ii. Apply Loop optimization to the following three address statements (8)

```

t1 = 202; i = 1; L1: t2 = i > 100; if t2 goto L2; t1 = t1 - 2; t3 = address of a;
t4 = t3 - 4; t5 = 4 * i; t6 = t4 + t5; [t6] = t1; i = i + 1; goto L1; L2: next stmts;

```