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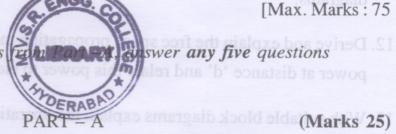
## FACULTY OF INFORMATICS

## B.E. 4/4 (IT) I Semester (Main) Examination, December 2010 WIRELESS AND MOBILE COMMUNICATIONS

Time: 3 Hours]

[Max. Marks: 75

Note: Answer all questions from Part-B.



(Marks 25)

1.	What are the methods to improve the coverage and capacity in cellular systems?	3
	Define Brewster angle. Calculate the Brewster angle for a wave impinging on ground having a permittivity of $E_T = 6$ .	3
3.	Explain in detail the transmitter and receiver of SZ-HI bns SZ-ZI stationary	2
4.	Briefly state the three basic propagation mechanisms.	3
5.	Define Encapsulation. aniwollot and to own was no atom rode a atinW	2
6.	What are the two basic groups of logical channels in GSM? 90T olidoM (8	2
7.	List the propagation models used for outdoor and indicate the specific room? (d situation for each model.	3
8.	List main features of 3 <sup>rd</sup> generation.	2
9.	Differentiate between Intercell handoff and Intracell handoff.	2
0.	Briefly explain MSK.	3



## FACULTY B-TRAP RMATICS

(50 Marks)

11. Draw the block diagram of a cellular system and explain how a cellular telephone call is made between the landline and the mobile user. Draw suitable timing diagrams.

10

12. Derive and explain the free space propagation model to determine the received power at distance 'd' and relate this power to electric field.

10

13. With suitable block diagrams explain the operation of DPSK transmitter and receiver.

10

14. a) Draw and explain the architecture of GSM and its channel types in detail.

b) Write a short note on various interfaces used and how a mobile call is originated in GSM.

15. Explain in detail the transmitter and receiver of DS-SS technique.

17. Write a short note on any two of the following:

16. Briefly explain all indoor propagation models, agong piece basic propagation models.

a) Mobile TCP

7. List the propagation models used for outdoor and indicate th POT gniqoon2 (d

moinstrange  $(2\times5=10)$ 

c) Trunking and grade of service.