U.S.N

P.E.S. College of Engineering, Mandya - 571 401
(An Autonomous Institution affiliated to VTU, Belagavi)
Eighth Semester, B.E. - Electronics and Communication Engineering
Semester End Examination; July - 2021
Advanced Wireless Technologies

Time: 3 hrs   Max. Marks: 100

Note: Answer any **FIVE** full questions.

1 a.	Explain the working of the core network of UMTS and GSM with the necessary architecture diagram.	12
b.	With the help of a neat diagram, explain the main components of the evolved packet core.	8
2 a.	With the help of a neat block diagram, explain high level architecture of LTE and also explain the internal architecture of UE.	10
b.	Briefly discuss about communication protocols.	10
3 a.	Explain the principles of OFDM and also mention the properties of OFDM.	10
b.	Discuss about OFDMA resource allocation in LTE.	10
4 a.	Explain about the transmission and reception of SC-FDMA with neat block diagrams.	10
b.	Write a brief note on transport channels and their mapping to the physical channels.	10
5 a.	Discuss briefly about 5G standardization activities.	10
b.	Explain the overview of 5G system concept.	10
6 a.	Explain about massive machine type communication.	10
b.	Write a note on new radio interface for dense deployments.	10
7 a.	Explain the NFV and SDN frameworks for the 5G subsystem architectures.	10
b.	Discuss about different protocol architecture for the integration of LTE and air interface.	10
8 a.	Explain fundamental split alternative for 5G technologies with neat overview diagram.	10
b.	Explain the E-UTRAN architecture defined under 3GPP for 5G technology.	10
9 a.	Write a brief note on design target for ultra reliable low latency communication.	10
b.	Explain about RRM techniques for mobile broadband D2D.	10
10 a.	Discuss about uplink and downlink TDD concept for D2D.	10
b.	Explain the operation of mode selection and spectrum allocation algorithm for D2D communication systems.	10

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