Iot

Q1. Low power, wide area network technology (LPWA; also referred to as LPWAN) enables connected devices to communicate over large geographical areas at a low bit rate (Single Answer, 10 Points)



True//////ANSWER



False

Q2. NB-IoT

SigFox LoRa

These technologies mentioned is suitable for low speed, deep coverage and low power consumption network requirement and can be implemented to support services such as sensors,meter,smart parking (Single Answer, 10 Points)



True//ANSWER



False

Q3. eMTC need bandwidth of ? (Single Answer, 10 Points)



180 khz



200khz



1.4Mhz//ANSWER



15khz

Q4. Whis one of these are true (Multiple answer, 10 Points)



In NB-IOT, CP Soulution does not need to establish DRB and S1-U connection, it transmit data through NAS message



In NB-IOT, UP Soulution need to establish DRB and S1-U connection



In Nb-IOT, Dedicated C-SGN for IoT service can be used when the network is matured and there is more IOT connections needed.



ALL ABOVE

In UP Solution, there three states for RRC which are Idle, Connected and Suspended

Q5. Which layer/protocol in eNB in charge of encryption, integrity check and header compression (Multiple answer, 10 Points)



RRC



PDCP///ANSWER



Physical



Mac

Q6. Modulation is done in which layer/protocol in eNB (Single Answer, 10 Points)



PHY///ANSWER



MAC



RLC



PDCP

Q7. In LTE Network, in order for UE get access to the network and be connected, all these interfaces are needed except \_\_\_\_\_which is optional(Single Answer, 10 Points)



UU Interface



S1



S11



X2///ANSWER

Q8. How many PRB does a bandwidth of 5 MHZ contains in 0.5ms? (Single Answer, 10 Points)



5



10



15



25///ANSWER

Q9. Which of these are wrong (Multiple answer, 10 Points)



PDCCH is used to carry Downlink control information/



PDSCH is used to carry uplink data////ANSWER



PUSCH are used to carry downlink data/ANSWER



Prach is used for downlink synchnronization

Q10. The ue/phone calculates the signal strength of the frequency (RSRP) based on \_\_\_\_ (Single Answer, 10 Points)



reference signal///ANSWER



EIRP



PRACH



calculates from all the sub carriers in the bandwidth

Q11. What will be the ideal environment for low power consumption of by iOT devices ? (Multiple answer, 10 Points)



Larger cell radius



Smaller cell radius////ANSWER



less bits transferred///ANSWER



periodicity of sending information.reading are are less///ANSWER

Q12. What are the power saving technologies for NB-IOT ? (Multiple answer, 10 Points)



Extended paging



PSM



eDRX



Long period TAU timer////ALL /ANSWER

Q13. What is the peak rate for 5G according to IMT 2020 (Single Answer, 10 Points)



1Gbit/s



100Mbps



300Mbps



10gbit/s///ANSWER

Q14. What is the latency in 5G (Single Answer, 10 Points)



0.5ms



1ms////ANSWER



10ms



50ms

Q15. 5G starts from which 3GPP release ? (Single Answer, 10 Points)



Release 12



Release 13



Release 14



Release 15

15//

Q16. In LTE Network, which element provides IP address (Single Answer, 10 Points)



eNB



SGW



HSS



PGW///ANS

Q17. When UE is inactive, which bearers will be released ? (Multiple answer, 10 Points)



Radio Bearer///ANSWER



S1-U Bearer///ANSWER



S5/S8 Bearer



SGS

Q18. This feature (Coverage Extension) is mainly used to ensure normal access and service provisioning for UEs in coverage enhancement areas. NB-IoT supports a maximum of \_, corresponding to the coverage enhancement(Multiple answer, 10 Points)



Coverage level 0///ANSWER



Coverage level 1////ANSWER



Coverage level 2///ANSWER



Coverage level 3

Q19. Which is true ? (Multiple answer, 10 Points)



UL CoMP uses the antennas of multiple cells to receive the same UE signals and then combines the signals received from the antennas///ANSWER



UL Comp won't be used if the UE is in the center of the serving cell///ANSWER



UL comp improves processing gain//ANSWER



UL Comp Increase throughput directly

Q20. NB-IOT supports single tone and multi tone transmission in the uplink. there few type of multi tone transmission which are (Multiple answer, 10 Points)



1 subcarrier



3 subcarrier///ANSWER



6 subcarrier///ANSWER



12 subcarrier///ANSWER