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3	GET_CHALLENGE	1. Label - S
2	Random number R_A	2. Label - R
4	Token 2	3. Label - P
1	Token 1	4. Label - T

Question 17 (6 points) ✓ *Saved*

An active RFID tag provides:

- [ ] easier in designing
- [x] limited lifetime
- [x] the higher data capacity
- [ ] unlimited lifetime
- [x] longer read range

Question 18 (5 points) ✓ *Saved*

A passive RFID tag using the 2.4GHz frequency will be:

- ( ) larger in size and faster data rate compared to the system using lower frequency.
- (•) smaller in size and faster data rate compared to the system using lower frequency.
- ( ) smaller in size and slower data rate compared to the system using lower frequency
- ( ) larger in size and slower data rate compared to the system using lower frequency.

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Submit Quiz *18 of 18 questions saved*

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Question 1 (5 points) ✓ *Saved*

Which one of the following coding methods is used for the signal waveform shown in Figure with bit sequence of $(011101)_2$?

- ( ) Pulse Pause coding
- ( ) Modified Miller coding
- (•) Miller coding
- ( ) Manchester coding

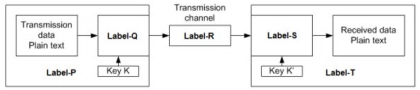
Question 2 (6 points) ✓ *Saved*

Which of the frequency ranges are generally used for RFID system?

- [x] SHF
- [x] HF
- [x] LF
- [x] UHF
- [ ] SLF
- [ ] EHF

Question 3 (7 points) ✓ *Saved*

Figure shows the encryption data transfer used in secure transfer of data in communication system. Match the following with their respective label.



4	Transmitter	1. Label-T
3	Decryption process	2. Label-R
5	Encryption process	3. Label-S
1	Receiver	4. Label-P
2	Cipher Data	5. Label-Q

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Question 4 (5 points) ✓ *Saved*

High security RFID systems are able to provide:

- eavesdropping into radio communications and replaying the data.
- duplication and modification of data by authorised user.
- unauthorised access to a building or receiving services without payment.
- unauthorised access to a very importance places using any RFID tags.

Question 5 (5 points) ✓ *Saved*

What is the typical read range of an LF RFID system?

- 10 m
- < 0.5 m
- 3 m
- 1 m

Question 6 (6 points) ✓ *Saved*

Which of the following are typical applications of RFID technology?

- [x] Animal Identification
- [x] Secure Payment
- [ ] Broadband wireless communications
- [x] Pallet Tracking
- [x] Electronic Toll Collection
- [x] Door Access system

Question 7 (6 points) ✓ *Saved*

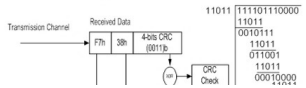
The limitations of RFID system are:

- [ ] unlimited life span of passive tags
- [x] the penetration power of RF energy
- [x] susceptible to the electromagnetic interference
- [ ] able to read multiple tags at the same time

Question 8 (5 points) ✓ *Saved*

Figure (A) shows the two data bytes (F7h & 38h) and the 4-bit CRC check sum "$(0011)_b$" which were received by an RFID transponder. Figure (B) shows the intermediate output checksum "$(1101)_b$" of the data byte (F7h) being divided by the given generator polynomial (X^4+X^3+X+1) as an example.

Which of the following is the final 4-bit CRC check sum output "A" at the transponser for comparison?



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Question 8 (5 points) ✓ *Saved*

Figure (A) shows the two data bytes (F7h & 38h) and the 4-bit CRC check sum "$(0011)_b$" which were received by an RFID transponder. Figure (B) shows the intermediate output checksum "$(1101)_b$" of the data byte (F7h) being divided by the given generator polynomial (X^4+X^3+X+1) as an example.

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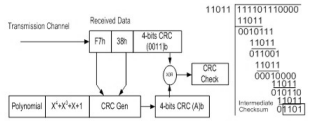

Figure A Figure B

- 0101
- 0011
- 1100
- 0111

Question 9 (5 points) ✓ *Saved*

The reason for using beacon concepts in active tags that operate at fixed interval is:

- to provide greater distance.
- to store additional information sent by the transceiver.
- to save power.
- to have larger memories.

Question 10 (5 points) ✓ *Saved*

Mutual Symmetrical Authentication is a method that involves:

- Common secret key
- Error detection
- Special security module
- Common derived Key

Question 11 (5 points) ✓ *Saved*

The encrypted data transfer involves:

- anti-collision
- power saving
- energy transfer
- decryption

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Question 12 (5 points) ✓ *Saved*

The most suitable radio frequency used for animal identification system is:

- ○ UHF
- ○ Micrwave frequency
- ○ HF
- ◉ LF

Question 13 (6 points) ✓ *Saved*

Which of the following is/are TRUE about RFID technology?

- ☑ EPC (Electronic Product Code) UHF tags can be used to track the items in warehouse.
- ☐ HF tags are more expensive than the LF tags
- ☐ Data rate of an RFID system depends upon the frequency band that used. The data rate is faster when the frequency is lower in principle.
- ☑ HF tags are relatively short read range and slower data rates when compared to UHF tags
- ☑ LF tags are used for animal tracking applications due to least susceptible to performance degradations from liquids.

Question 14 (6 points) ✓ *Saved*

Which one of the following is/are TRUE in Mutual Symmetrical Authentication method?

- ☑ The token can be encypted using any algorithm.
- ☑ Common secret key K is used in both reader and tag.
- ☐ The secret keys are transmitted over the airwaves.
- ☐ The two random numbers generated in the reader and tag are the same.

Question 15 (5 points) ✓ *Saved*

The need for an antenna in a passive RFID tag is:

- ○ to save power.
- ○ to provide fast response.
- ◉ to collect power from in incoming signal.
- ○ to store additional information sent by the reader.

Est. Length: 2:00:00 Time Taken:0:10:49 KHIU KIM HONG EEE-DEEE-FT-3A-06: Attempt 4

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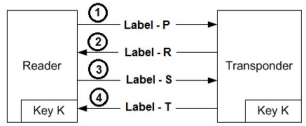
Question 15 (5 points) ✓ *Saved*

The need for an antenna in a passive RFID tag is:

- ○ to save power.
- ○ to provide fast response.
- ◉ to collect power from in incoming signal.
- ○ to store additional information sent by the reader.

Question 16 (7 points) ✓ *Saved*

Figure shows the Mutual Symmetrical Authentication used in RFID system. Transmission sequence is as shown in Figure like in order 1, 2,3 & 4. Match the fllowing with their respective label.



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Question 17 (6 points) ✓ *Saved*

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- ☑ limited lifetime
- ☑ the higher data capacity
- ☐ unlimited lifetime