IAT-2 QUESTION PAPER AND SOLUTIONS

✓ The TTL field has value 10. How many routers (max) can process this datagram? 1 / 1

- a) 11
- b) 5
- c) 10 ✓
- d) 1

Add individual feedback

✓ Which field helps to check rearrangement of the fragments? 1 / 1

- a) offset ✓
- b) flag
- c) ttl
- d) identifier

Add individual feedback

✓ The size of an IP address in IPv6 is 1 / 1

- a) 4bytes
- b) 128bits ✓
- c) 8bytes
- d) 100bits

Add individual feedback

✓ Which of the following are components of a sensor network? 1 / 1

- Sensor nodes
- Sensors
- Gateways
- All of the above ✓

Add individual feedback

✓ Which are the features present in IPv4 but not in IPv6? 1 / 1

- a) Fragmentation
- b) Header checksum
- c) Options
- d) Anycast address ✓

Add individual feedback

✓ 6LoWPAN Adaption layer contains? 1 / 1

- a) Header compression
- b) Fragmentation
- c) Layer 2 forwarding
- d) Header compression, Fragmentation, and Layer 2 forwarding ✓

Add individual feedback

✓ _____ is an application layer protocol for resource constrained devices. 1 / 1

- (●) a) CoAP ✓
- ( ) b) HMTP
- ( ) c) MQTT
- ( ) d) TCP/IP

Add individual feedback

✓ 6LoWPAN allows total frame size (MTU) of 1 / 1

- ( ) 128B
- (●) 127B ✓
- ( ) 126B
- ( ) 125B

Add individual feedback

✓ HTTP is _____ protocol. 1 / 1

- (●) a) application layer ✓
- ( ) b) transport layer
- ( ) c) network layer
- ( ) d) data link layer

Add individual feedback

✓ HTTP client requests by establishing a _____ connection to a particular port on the server 1 / 1

- ( ) a) user datagram protocol
- (●) b) transmission control protocol ✓
- ( ) c) border gateway protocol
- ( ) d) domain host control protocol

Add individual feedback

✓ FTP server listens for connection on port number _____ 1 / 1

- a) 20
- b) 21 ✓
- c) 22
- d) 23

Add individual feedback

✓ The features of Nimbits serverL are 1 / 1

- A NimbitsServerL is deployed at each device node provides time stamp to the incoming data
- The server at device node is an instance of the NimbitsSeverS at the cloud
- Each NimbitsServerL of the device node generates the calculation objects for device nodes
- All of the above ✓

Add individual feedback

✓ What is the function of data feeds in Nimbits server 1 / 1

- Provide geo time stamping to the data
- Contains the latest information of the current information like events, alerts etc
- Provide processing, filtering and storing of the data
- All of the above ✓

Add individual feedback

✓ WSN structure will be succeed using IP which one is more efficient and appropriate? 1 / 1

- ○ IPv4
- ○ IPv5
- ◉ IPv6 ✓
- ○ None above

Add individual feedback

✓ In WSN which type of controller module is mostly used 1 / 1

- ◉ Microcontrollers ✓
- ○ DSPs
- ○ FPGA
- ○ ASICs

Add individual feedback

✓ Transceivers mostly work in 1 / 1

- (●) Transmit mode, receiver mode, Idle mode, Sleep mode ✓
- ( ) Transmit mode, receiver mode, Idle mode, hybrid mode, Sleep mode
- ( ) Transmit mode, receiver mode, Idle mode, hybrid mode, Deep sleep mode
- ( ) Transmit mode, receiver mode, Idle mode, Sleep mode, Awake mode

Add individual feedback

✓ The function of the wakeup receivers are: 1 / 1

- ( ) Also called as Spread - spectrum transceivers
- ( ) The receiver is the part of RF band of transceiver
- (●) They are secondary radio transceiver, is implemented to monitor the channel condition ✓
- ( ) None of the above

Add individual feedback

✓ What are passive sensors 1 / 1

- (●) They are self-powered in the sense that they obtain energy from the environment. ✓
- ( ) They need external power to operate.
- ( ) Examples are : carbon microphone, thermistors, strain gauges
- ( ) They are ominidirectional

Add individual feedback

✓ The switching to the sleeping mode is possible if 1 / 1

- (●) Esaved > Eoverhead ✓
- ( ) Esaved < Eoverhead
- ( ) Esaved = Eoverhead
- ( ) None of above

Add individual feedback

✓ What is an event handler 1 / 1

- An embedded system in WSN that handles hardware interrupts
- ◉ A set of instructions that store the necessary information about the occurrence of event ✓
- A graphical user interface
- None of the above

Add individual feedback

✓ What is a Real Time Operating System (RTOS) 1 / 1

- It is a type of operating system that is embedded means specifically configured and programmed for a certain hardware configuration to do specific tasks
- Hardware that uses embedded operating systems are lightweight, compact and operate with a limited number of resources.
- Specifically designed for WSN
- ◉ All of the above ✓

✓ Find the correct statement 1 / 1

- A frame: Defines the work to be done
- Tasks: Request
- Event Handlers: Interrupts/trigger arriving from external ✓
- Command: Contains the state information

Add individual feedback

✓ Find the correct statement 1 / 1

- a) Commands are passed from high level to low level components and Event are passed from low level to high level components. ✓
- b) Commands are passed from low level to high level components and Event are passed from low level to high level components.
- c) Commands are passed from high level to low level components and Event are passed from low level to high level components.
- d) Commands are passed from low level to low level components and Event are passed from low level to high level components.

✓ What is the full form of nesC 1 / 1

- network embedded system programming.
- ◉ network and embedded system programming. ✓
- network and embedded system program.
- network embedded system program

Add individual feedback

✓ In node mobility 1 / 1

- The objects tracked are mobile
- The information sinks are mobile
- ◉ The wireless sensor nodes themselves are mobile ✓
- None of them

Add individual feedback

✓ In Quality of service in wsn, find the correct statement 1 / 1

- ○ Time to first node death: The time at which the first node runs out of energy or stop working.
- ○ Network half-life: The time at which 50% of the nodes runs out of energy or stop working.
- ○ Time to partition: The time at which network get divided into further networks or there is partition between source and sink.
- ◉ All of the above ✓

Add individual feedback

✓ In In-network processing 1 / 1

- ○ The processing is done at the gateway outside the network.
- ◉ The processing is done inside the sensor network close to the source. ✓
- ○ There is a central controller controllers for all the nodes in wsn
- ○ None of the above

Add individual feedback

✓ What is overhearing 1 / 1

- ○ Listening when no traffic is sent
- ○ A type of collision
- ◉ Receiving the packets destinated for other nodes ✓
- ○ Headers for signlling

Add individual feedback

✓ What are low duty cycle protocols 1 / 1

- ○ Wakeup period has same waking time and sleeping time
- ◉ Where active period is very less than sleeping period ✓
- ○ Where active period is more than sleeping period
- ○ None of these

Add individual feedback

✓ What is Duty cycle 1 / 1

- ○ Ratio of active and sleep period
- ○ Ratio of sleep and wakeup period
- ◉ Ratio of active and wakeup period ✓
- ○ Ratio of wakeup and sleep period

Add individual feedback

✓ In periodic wakeup scheme 1 / 1

- ○ The node spends most of the time in sleeping state.
- ○ The node wakeup periodically in the 'listen period' to receive the packets from other nodes
- ○ The sleep state is left only when the node is about to transmit and receive the packets
- ◉ All of the above ✓

Add individual feedback

✓ What is full form of STEM 1 / 1

- ○ Spare Topology Topology and Energy Management
- ◉ Sparse Topology and Energy Management ✓
- ○ Sparse Target and Energy Management
- ○ Sparse Topology and Energy Monitering

Add individual feedback

✓ Which of the following statements are correct for STEM-T 1 / 1

- ○ The neighboring nodes (other then the intended recipient) which hear busy signal shift to data channel or to the sleeping mode.
- ○ The transmitter sends busy tone on wake up channel for a long enough time to hit the receivers listen period.
- ○ Busy tone does not contain any address information
- ◉ All of the above ✓

Add individual feedback

✓ Which of the statements are true for the SMAC protocols 1 / 1

- ○ Sensors Medium Access Control
- ○ S-MAC or Scheduled MAC.
- ○ A periodic wakeup schedule is maintained by the nodes
- ○ specifically designed for the Ad hoc wireless sensor networks
- ◉ All of above ✓

Add individual feedback

✓ What is full form of RTS and CTS signal used in S-MAC 1 / 1

- ◉ RTS: Request to send, CTS: Clear to send ✓
- ○ RTS: Request to synchronize, CTS: Clear to synchronize
- ○ RTS: Required to send, CTS: Clear to send
- ○ None

✓ Which are the contention based protocols 1 / 1

- ○ SMAC, CSMA
- ◉ CSMA, PAMAS ✓
- ○ PAMAS, LEACH
- ○ LEACH, SMAC

Add individual feedback

✓ What is full form of PAMAS 1 / 1

- ○ Power Adaptive Multi-Access with Signaling
- ◉ Power Aware Multi-Access with Signaling ✓
- ○ Power Aware Multi-Access with Signal
- ○ Power Aware Multiple-Access with Signaling

Add individual feedback

✓ What is the use of probing protocol on the control channel 1 / 1

- The node sends a t_probe (l/2,l) packet where 'l' is the length of packet
- Probing protocol defines the length of outgoing transmission (i.e. Probing protocol defines the length of outgoing transmission (i.e. length of ongoing packet)
- Any transmitter node who finishes the transmission with in this time interval '(l/2,l)' answers with t_probe_response (t) packet indicating the time 't' where transmission ends.
- ◉ All of the above ✓

Add individual feedback

✓ What is full form of LEACH protocol 1 / 1

- Low-Energy Adaptive Clustering Hierarchy
- ◉ Low-Energy Adaptative Clustering Hierarchy ✓
- Low-Energy Adaptive Cluster Hierarchy
- Low-Energy Aggregation Clustering Hierarchy

Add individual feedback

✓ Which statement is false in LEACH protocol? 1 / 1

- In the set up phase, clusters are created and cluster heads are determined
- The nodes join the cluster nearest to them with the strongest signal
- ◉ In the steady phase the CSMA-based solutions are used for the inter-cluster communication ✓
- In the steady phase the TDMA-based solutions are used for the inter-cluster communication

Add individual feedback

✓ The LEACH protocol uses "DYNAMIC" cycles 1 / 1

- CDMA
- FDMA
- TDMA ✓
- OFDMA

Add individual feedback

✓ What is full form of SMACS 1 / 1

- Scheduled Media Access Control Protocol
- Self-Organizing Medium Access Control for sensor network ✓
- Schedule Media Access Control Protocol
- None of all

Add individual feedback

✓ What types of links exists in SMACS 1 / 1

- ○ Unidirectional
- ○ Bidirectionals
- ◉ Both unidirectional and bidirectional ✓
- ○ None of all

Add individual feedback

✓ 802.11 wireless networking uses what method as the media access method? 1 / 1

- ○ CSMA/CD
- ○ CTS/RTS
- ◉ CSMA/CA ✓
- ○ CSCD/CA

Add individual feedback

RTS/CTS is called as 1 point

- ○ Waiting period
- ◉ Contention Period
- ○ Running period
- ○ None of these

Clear selection

✗ Which of the following statements are true: 0 / 1

- (●) In Concurrent processes multiple processors execute instructions at different time for better performance. ✗
- ( ) In Concurrent processes same processes are executed at the same time on a single CPU
- ( ) In Concurrent processes multiple processes are executed at the same time on a single CPU
- ( ) None of the above

Correct answer

- (●) In Concurrent processes multiple processes are executed at the same time on a single CPU

Add individual feedback

Which of the following are components of a sensor network? 1 point

- ( ) Sensor nodes
- ( ) Sensors
- ( ) Gateways
- (●) All of the above

Clear selection

Which of the following field in IPv4 datagram is not related to fragmentation 1 point

- ( ) a) Flags
- ( ) b) Offset
- (●) d) Identifier
- ( ) c) Header
- ( ) Other: _____

Clear selection

The steady phase in Leach protocol consists of: 1 point

- (●) First Advertisement phase, then Cluster setup phase and final Steady phase
- ( ) First Cluster setup phase, then Advertisement phase and final Steady phase
- ( ) First Steady phase, then Cluster setup phase and final Advertisement phase
- ( ) None of the all

Clear selection