What is the best way to have a secure BLE connection?
The best way to secure BLE connection is to do pairing/bonding with LE Secure connection with OOB/out of band authentication. It's possible to change advertising data during run time. Especially with advertising extension you have more possibility to configure a \connectionless\" data broadcasting "

What's the relationship between broadcaster and peripheral?
The broadcaster is not expected to enter a connection with a central. So basically, advertising with non-connectable mode

How to connect Bluetooth LE end 10 nodes to gateway. Which topology is suitable between Star and Mesh? We are using Nordic nrf52382.
If all 10 nodes are in the range of the gateway/central it's possible to just connect them using BLE as a star network , not mesh. Mesh has very limited throughput. The biggest advantage of mesh is to extend the network coverage more than the range of a single central
Star vs Mesh Blog good read https://blog.nordicsemi.com/getconnected/wireless-network-topologies

Will the scan response after 39 channel only or is it on all the 3 channels ?
Scan request/response can be done on all 3 channels. But if your observer sends a scan request on channel 39, the response will also be sent only on channel 39 for this time

Is it possible to change the white list dynamically during operation?
Yes it's possible to change the whitelist in runtime

Channels 37, 38 & 39 are used for advertisement since they are least used by Wi-Fi.
What happens after the device is connected, won't it interfere with Wi-Fi channels after the connection or Adaptive Frequency Hopping takes or something similar takes care after the connection is established?
The ISM band (2.4GHz) is shared between many RF technology and yes there is a chance that there will be interference. But note that a device including wifi won't do transmitting/receiving all the time. They are short burst of data. So interference can happens but it doesn't happens all the time (we have 37 bands for data). 2.4 GHz is quite crowded, that's one of the reason Wifi now uses 5GHz quite commonly.

What is purpose of descriptors?
If you asking about the descriptors in ATT table, it's used to give more information about the value of the characteristic, or to enable notification/indication

What is the minimum duration a BLE device take to complete a advertisement ?
It's depends on the length of the payload, the PHY you use (1Mbps or 2 Mbps) but basically if you do 1Mbps it's 1 bit per micro second. Don't forget to count the overhead

To define descriptors for characteristic is it mandatory?
No, it's not. We will have another webinar covering this topic. Today it will only cover Advertising :)

I want to use manufacturer specific data, my company is not member of Bluetooth SIG. Can I use chip/stack manufacturer ID?
It's OK to use Nordic company ID (0x0059) but it's not recommended. It's free to register one as far as I know

Does chaining have a limit on number of chains?
I'm not 100% sure, you may want to post the question on Nordic DevZone, I would need to check the spec :)

Extended adv is available from BLE5 onwards or old Bluetooth versions as well?
It's available from BLE 5 . If the device only support Bluetooth 4.2 and backward it won't be able to advertise/scan for extended advertising. Even if a device supports 5.0 it's not obligated that it has to support extended advertising. It's an optional feature

Is Periodic Advertising already supported in the latest soft device?
Periodic advertising is not supported in our Softdevice. There are work on supporting that in Zephyr

If I use the chip and soft device from Nordic, do I need to do Bluetooth certification for my product explicitly?
You would need to register your product and get a DID to use Bluetooth technology. But Nordic has done most of the qualification, most of the time you only need to do a RF PHY retest to get the QDID

My Company has a (Ethernet) MAC Address Vendor ID. Can we use the same ID also for BLE?
I don't think so . Company ID has to be registered with Bluetooth SIG. Listed here:
https://www.bluetooth.com/specifications/assigned-numbers/company-identifiers/

Can we update advertising data while advertising is ongoing? Is there an example for this case?
Yes, the scan_adv sample is continuously changing the content it is advertising. Each advertisement contains a different count.

If I want to advertise data from the peripheral device without a connection using the manufacturer adv data is the best way?
Yes, you can use manufacturer adv data for that purpose.

Does anyone here have recommendations for resources for reading on BLE (books, articles, etc.)?
Join the Bluetooth SIG and read the specifications. all implementations differ in detail. Look for \Getting started with Bluetooth Low Energy\" it's written by one of our Nordic employee, Carles :)"

\Bluetooth low energy, the developers handbook\" from robin heydon is a very good starting point. But it will only cover BT LE 4.x as it's a little bit older"

Does nordic give reference design for the antenna design for nordic chips?
It's not included in the reference design , but you can follow what we did in our Dev Kit. The layout of the Devkit is available

If I do advertising on data channels, it might be a trade-off with availability of the advertised data because there is more chance for the packet to collide on the only channel on which it is sent, is that correct?
The data channel can be changed, so it's the same chance of colliding as when you do normal connection

Is it mandatory to register a company with the Bluetooth SIG to obtain a company ID if we want to use BLE in our product?
No it's not. But you need to do qualification to register your product(s)