

## Technical Quiz

### Questions & Answers

#### Q. What is PAN, ISM Band?

**Ans : ISM band: Industrial, Scientific and Medical band**

The **ISM** radio **bands** were originally reserved internationally for the use of RF energy for industrial, scientific and medical purposes other than communications. Examples of applications in these bands include radio-frequency process heating, microwave ovens, and medical diathermy machines. The powerful emissions of these devices can create electromagnetic interference and disrupt radio communication using the same frequency, so these devices were limited to certain bands of frequencies

<b>Radio Frequency Spectrum &amp; Industrial Scientific Medical (ISM)</b>			
<b>LF</b>	<b>HF</b>	<b>UHF</b>	<b>Microwave</b>
125 Hz-140KHz	13.56 MHz	860 MHz-960 MHz	2.45 GHz & 5.8. GHz
		865 MHz-869 MHz ( India)	

In general, communications equipment operating in these bands must accept any interference generated by ISM equipment

#### **PAN : Personal Area Network**

A network for interconnecting devices centered around an individual person's workspace - in which the connections are wireless. Typically, a wireless personal area network uses some technology that permits communication within about 10 meters - in other words, a very short range. One such technology is Bluetooth, using which we can connect our mobile phone, our wireless headphone, laptop.

A WPAN could serve a more specialized purpose such as allowing the surgeon and other team members to communicate during an operation.

A key concept in WPAN technology is known as "plugging in". In the ideal scenario, when any two WPAN-equipped devices come into close proximity (within several meters of each other) or within a few kilometers of a central server, they can communicate as if connected by a cable. Another important feature is the ability of each device to lock out other devices selectively, preventing needless interference or unauthorized access to information.

The technology for WPANs is in its infancy and is undergoing rapid development. Proposed operating frequencies are around 2.4 GHz in digital modes.

The ISM bands are widely used for Radio-frequency identification (RFID) applications, including those used by biometric passports and contactless smart cards.

**By: Prof. Deepali Sawai**

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**Q. What is Sticky Bit**

**Ans :** A bit in the page table which is set to 1 when a shared program is in use to prevent its pages being replaced as long as at least one user is executing the shared program.

**By Dr. Aruna Deoskar**

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**Q. Why pointer concept is not in java?**

**Ans : A)** 1. Pointers are a notorious source of bugs. Eliminating them simplifies the language and eliminates many potential bugs. Pointers and pointer arithmetic could be used to sidestep Java's run-time checks and security mechanisms. Removing pointers allows Java to provide the security guarantees that it does.

2. Java is a platform independent language and also it is a one type of internet based language.

3. All the object creation act like pointers only. Only thing is java has the facility of garbage collector, so no need to deallocate memory.

**b. What is the Output of following program?**

class A

```
{ public static void main(String[] s)
    {      System.out.println(s[1] + s[2] + s[3]);      }
}
```

Parameters passed : java A 12345

**Options**

- (i) 1    (ii) 12    (iii)1234    (iv) ArrayIndexOutOfBoundsException
- (v) Compilation Error

**Ans: ArrayIndexOutOfBoundsException**

**By : Prof. Arti Mhaisekar**

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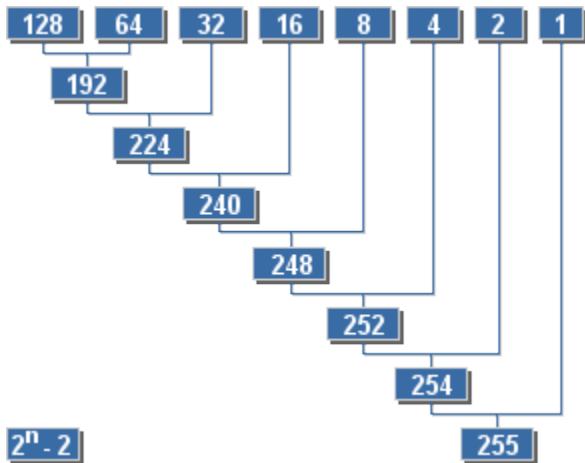
**Q. What are the subnet mask, first available host address of subnet one (NOT subnet zero), and the maximum number of hosts per subnet for the network below? (You need to allow for maximum number of hosts. Also, you can use subnet zero and all-ones subnet.**

Network ID:  
Subnets Required:

183	178	0	0
86			

Subnet Mask:  
1st Available Host  
Address of Subnet 1:  
Max # of hosts/subnet:


Reference Chart



Ans :

Network ID:  
Subnets Required:

183	178	0	0
86			

Subnet Mask:  
1st Available Host  
Address of Subnet 1:  
Max # of hosts/subnet:

255	255	254	0
183	178	0	1
510			

**By: Prof. Kiran Shinde**

**Q. What is the difference between reserve words and Key Words?**

Ans : Keywords are reserve words, reserve words can be used by programmer for variables, function name etc. But keywords are not allowed for variable name while reserve words are allowed

**B) Interpret the following**

Char ((\*X()) [ ] ( )

Char ((\*X[3])( ) ) [5]

A) **Ans :** .i. x is function returning pointer to array[] of pointer to function returning char.

ii. x is array[3] of pointer to function returning pointer to array[5] of char.

**By: Prof. Sanjay Mate**

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**Q. What is a satellite Assembly?**

- i. A Peripheral Assembly Designed to Monitor Permissions requests from an application.
- ii. Any DLL file used by an EXE file.
- iii. An assembly containing localized resources for another assembly.
- iv. An assembly designed to alter the appearance or an application.

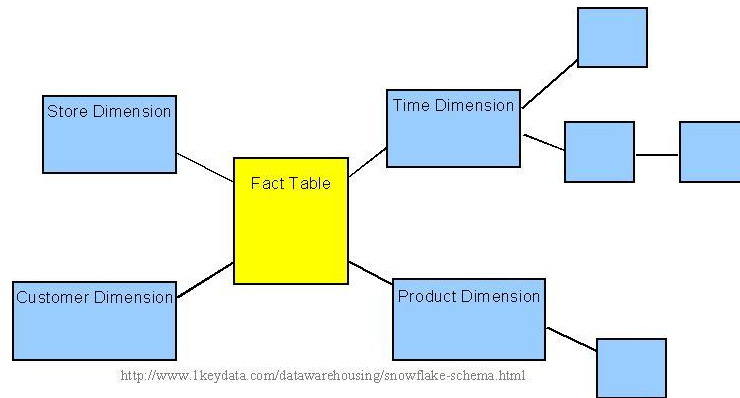
**Ans :** iii) An assembly containing localized resources for another assembly.

**By: Prof. Asmita Choudhari**

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**Q. What is Snowflake Schema?**

The snowflake schema is an extension of the star schema, where each point of the star explodes into more points. In a star schema, each dimension is represented by a single dimensional table, whereas in a snowflake schema, that dimensional table is normalized into multiple lookup tables, each representing a level in the dimensional hierarchy.



### *Sample snowflake schema*

For example, the Time Dimension that consists of 2 different hierarchies:

1. Year → Month → Day
2. Week → Day

We will have 4 lookup tables in a snowflake schema: A lookup table for year, a lookup table for month, a lookup table for week, and a lookup table for day. Year is connected to Month, which is then connected to Day. Week is only connected to Day. A sample snowflake schema illustrating the above relationships in the Time Dimension is shown to the right.

The advantage of the snowflake schema is the improvement in query performance due to minimized disk storage requirements and joining smaller lookup tables and the disadvantage is the additional maintenance efforts needed due to the increase number of lookup tables.

**By: Prof. Renu Mathew**

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