Q: Can DC be applied to transformers ?

No

i) Transformer works on Faraday's law of Electromagnetic Induction for which current in coil must change. If DC is applied current will not change and transformer will not work.

ii) Practically winding resistance is very small. For DC ,inductive reactance is zero and frequency is zero. Therefore impedance is low. Thus winding draws more current which may damage the winding.

Q: How Does a Transformer Work?

A: Transformer consists of two coils.If one coil is connected with ac voltage source then it will produce alternating flux in the core. Most of the flux is linked with second coil hence mutually induced emf will produce in the second coil as per faraday's law of electromagnetic induction.

Q: Distinguish between core and shell type transformer.

A:

Core Type Transformer	Shell type transformer
The core has only one magnetic circuit.	It has two magnetic circuits.
Core has two limbs.	Core has three limbs.
It has less mechanical protection to coil.	It has better mechanical protection to coil.
It has better cooling since more surface is exposed to atmosphere.	Cooling is not very effective.
Natural cooling is provided.	Natural cooling cannot provide
This transformer is easy to repair.	This transformer is not easy to repair.

The winding is surrounded considerable part of core.	Core is surrounded considerable part of winding of transformer.

Q: What are isolation transformers?

In this type of transformer the primary and secondary are same. When it is required to isolate the primary and secondary circuits these type of transformers are used. It protects the circuits connected in secondary side when major fault occurs in primary side.

Q:What is voltage transformation ratio or turn ratio?

It is expressed as ratio of the primary and secondary voltages of transformer.

or

It is expressed as ratio of the primary and secondary turns of transformer.

E1/ E2= T1/T2 = K

Q: What are the properties of ideal transformer?

1.There should be no losses

2.The winding should have zero resistance

3.The leakage flux should be zero

4. The permeability of core should be so high that the negligible current is required to establish the flux in it.

Q: Does the transformer draw any current when secondary is open ? Why ?

Yes,it (primary) will draw the current from the main supply in order to magnetize the core and to supply iron and copper losses on no load . There will not be any current in the secondary since secondary is open

Q: What is Meant by Regulation in a Transformer?

Voltage regulation in transformers is the difference between the no load voltage and the full load voltage.

This is usually expressed in terms of percentage. For example: A transformer delivers 100 volts at no load and the voltage drops to 95_volts at full load, the regulation would be 5%.

dry type distribution transformers generally have regulation from 2% to 4%, depending on the size and the application for which they are used.The change in secondary terminal voltage from no load to full load expressed as a percentage of no load or full load voltage istermed as regulation.

%regulation =E2-V2/E2 *100

%regulation = voltage drop in transformer/ no load voltage of transformer

V2>E2 for leading p.f load

V2<E2 for lagging p.f load

Q: What is Eddy current loss in transformer?

In transformer, we supply alternating current in the primary, this alternating current produces alternating magnetizing flux in the core and as this flux links with secondary winding, there will be induced voltage in secondary, resulting current to flow through the load connected with it. Some of the alternating fluxes of transformer; may also link with other conducting parts like steel core or iron body of transformer etc. As alternating flux links with these parts of transformer, there would be a locally induced emf. Due to these emfs, there would be currents which will circulate locally at that parts of the transformer. These circulating current will not contribute in output of the transformer and dissipated as heat. This type of energy loss is called eddy current loss of transformer.

$$W_e = K_e f^2 K_f^2 B_m^2 \; watts$$

Q: What is hysteresis loss in transformer?

The magneto motive force or mmf applied in the transformer core is alternating. For every cycle due to this domain reversal, there will be extra work done. For this reason, there will be a consumption of electrical energy which is known as Hysteresis loss of transformer.

$$W_h = K_h f (B_m)^{1.6} \; watts$$