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Subject Applied Chemistry

Q 3. B) solar panel you will suggest

to use in Peshawar also write

a policy? provide your answer

and with example and proof

(Ans) The best way to make

saving from solar power is to

use as much electricity during

the day when your panels

are generating energy

we refer to this as self

consumption unless you have

a solar battery any excess

power that your boat uses

gets exported back to the

grid you will receive a

feed-in tariff for each

kilowatt hour you export

but it is only roughly 40%

of what you pay for

electrical. factor this in

mind when using the

calculator. the higher

percentage of electrical

you use to during the day,

the higher your solar savings

will be.

for example

so the total load of the

house is 3000 watt

and it will use 2500 watt  
if we will use solar panel  
of 1000 watt so our cost will  
must be lower than wapda bill.  
a day time we use electricity  
in direct solar panel so that  
is the wapda power saving.

Q2.B | Different between N-type and P-type.

### N-TYPE

- (i) The N-type is negative charge
- (ii) Semiconductor material in which pentavalent impurities such as phosphorus and arsenic is called N-type semi-conductor
- (iii) in N-type semi-conductor electron are majority carrier and hole are minority carrier.
- (iv) in N-type semiconductor is called donor type semi-conductor, because the doped impurity atom donated an free electron semiconductor for conduction
- (v) N-type semiconductor for holes are generated.

### P-TYPE

- (i) The P-type is positive charge.
- (ii) P-type semiconductor material in which trivalent impurities such as Boron and gallium are doped is called P-type semiconductor.

- (iii) in ~~#~~  $P$ -type semiconductor hole are majority carriers while electrons are minority carriers
- (iv) in  $P$ -type of semiconductor is called acceptor type semiconductor.

from accepts the electron resulting conduction in  $P$ -type semiconductor.

- (v)  $P$ -type semiconductor electron are generated.

Q3a) Role of depletion region in semiconductor material.

Ans) in semiconductor region, also called depletion region, also called depletion layer, space charge region or space charge layer is an insulating region within a conductive doped semiconductor material where the mobile charge have been diffused away or have been forced away by an electric field. The only element left in the depletion region are ionized donor or acceptor impurities.

The depletion region is so named because it is formed from a conducting region by removal of all free charges carriers leaving none to carry current.

Q2a) Doping force in converting solar energy into electrical energy is considered important.

If the solar energy is to become a practical alternative to fossil fuels we must have efficient ways to convert photon into electrical, fuel, and heat.

The need for better conversion technologies is a driving force behind many recent developments in biology, materials, and especially nanoscience.

Doping force is mainly the to be

flow of electron in unidirection, greater energy efficiency and reduce energy cost to consumers.

The easy and practical way of producing doping force is introducing P-type and N-type junctions.

If the doping force a depletion layer is formed when there is no free electron and whole.

Part A (Objective Type)

- (1) The bio methane is produced by the Anaerobic oxidation of biomass.
- (2) Bio gas is compressed and used as fuels in vehicles.
- (3) The Bio Methanol is used as the agricultural fertilizer.
- (4) Bio diesel is produced by the Trans esterification of the vegetable oil.
- (5) fuel cell is an electrochemical device that convert the chemical energy into the electrical energy from cathode hydrogen gas is bubbled in hydrogen oxygen cell.
- (7) A module in a solar panel refers to series and parallel arrangement of solar cell.
- (8) The efficiency of the solar cell is about .
- (9) The current density of a photo voltaic cell range from 40-50 mA/cm<sup>2</sup>.
- (20) Solar energy is radiated by clouds and earth as long wave energy.