



## PHYSICS-2 GUESS 2024

### SHORTS:

#### ch 12

- properties of electric field lines
- define columb's law
- potential gradient and prove
- define electron volt and prove  
 $1\text{ev} = 1.6 \times 10^{-19} \text{ J}$
- define one farad
- charging and discharging of capacitor
- ex 3,5,9

#### ch 13

- sources of current v imp for short and mcqs
- ohmic and non ohmic with examples
- rheostat
- thermister
- diff b/w emf and potential difference
- kirchoff's 1st and 2nd rule v imp
- conductivity and conductance
- resistivity
- ex 2,4,5,7



## ch 14

- lorentz force with mathematical relation
- state ampere's law
- uses of cro
- deflecting couples
- sensitivity of galvanometer
- conversion of galvanometer into voltmeter and ammeter
- ex 8,9,10,11,14,15

## ch 15

- right hand and flehming's left hand rule
- lenz's law
- faraday's law
- define one henry
- diff b/w motor and generator
- back emf
- step up and step down
- ex 1,5,9,10,12,14



## ch 16

- peak and rms value
- impedance with relation
- define phase
- principle of metal detector
- what is choke
- principle of virtual ground
- modulation
- properties of rlc series & parallel circuit
- define resonance frequency
- ex 1,3,5,9,10

## ch 17

- ductile and brittle substances with example
- elastic and plastic limit
- modulus of elasticity
- intrinsic and extrinsic substances
- write a note on super conductors ( v imp )

(above short may come as a long question as well)

- hysteresis loss
- coercivity
- ex 1,4 ( both are v imp)



## ch 18

- what is forward and reverse biasing
- what is led
- what is photo diode and its applications
- what is transistor
- what are logic gates and their uses
- draw truth table for NOR and AND gate
- how logic gates are used as night switches
- ex 1,2,3,4,6(imp),7,8

## ch 19

- frames of references with types
- what is navastar and its application (v imp)
- plank's theory
- annihilation
- pair production
- state heisenberg uncertainty principle
- wha is cascade of electrons
- what is quenching / quenching process / quenching gass
- ex 1,2,4,5,6,10,18(imp),19(imp),22



## ch 20

- define atomic spectrum
- what is bohr's model postulates
- what is inner shell transition
- helium neon laser
- cat scanner
- uses of x rays
- uses of laser
- ex 1,3,4,5,7,10(v v v imp)

## ch 21

- what are isotopes what they have same and what is different in them
- mass spectrograph
- what is nucleon
- half life and decay constant
- what is fluorescence
- what are nuclear reactions (fission and fusion)
- what is side chain nuclear reaction
- what are basic forces of nature
- what are hadrons and leptons
- define quarks
- ex 2(v imp),3,4,8,10,12(v imp),14,15,17(v imp),20(v imp)



# PHYSICS-2 GUESS 2024

## LONGS and NUMERICALS:

### ch 12

- define capacitor/capacitance also find capacitance of parallel plate capacitor (v imp)
- energy stored in capacitor (v imp)
- milikan's oil method (v imp)
- gauss's law and applications

ex 12.6 v imp, num 12.1 , 12.3 , 12.4 v imp , 12.5 v imp , 12.12

### ch 13

- potentiometer also explain how it is used as potential divider , unknown emf and compare two emf's
- wheatstone bridge
- resistivity and its dependence (v imp)
- ohm's law

ex 13.1 , 13.3 (v imp) , num 13.1 , 13.2 , 13.4 , 13.5



#### ch 14

- prove  $F=ILB$  / force on current carrying conductor (v imp)
- prove  $F=qVB$  / force on a moving charge
- cro and uses
- galvanometer and conversion

ex 14.2 , 14.3 , 14.4 , num 14.2 , 14.3 , 14.4 , 14.8

#### ch 15

- write note on faraday's law , lenz's and motional emf
- compare mutual and self induction
- energy stored in inductor
- ac generator (v imp)

ex 15.1 , num 15.5 , 15.11 , 15.14 , 15.17

#### ch 16

- rlc series resonance with properties
- rlc parallel resonance with properties (v imp)
- electromagnetic waves with its principle (v imp)

ex 16.1 , num 16.6 (v imp) , 16.8 ( v v imp) , 16.9



## ch 17

- strain energy (v imp)
- energy band theory
- doping also explain formation of n-type and p-type
- magnetic properties of solids ( v v v imp)

num 17.1 and 17.5 (v v imp)

## ch 18

- rectification and explain half wave and full wave rectification (v imp)
- op-amp as inverting and non-inverting amplifier ( v imp)
- transistor as amplifier

ex 18.1 (v imp) , num 18.1 , 18.5

## ch 19

- black body radiation
- compton's effect (v imp)
- wave nature of particle
- davisson germer experiment

ex 19.4 , 19.7 , num 19.1 , 19.5 (v imp) , 19.9 ,  
19.10



## ch 20

- quantized radii ( v imp)
- x rays and characteristics x rays production
- quantized energy for bohr model

ex 20.1 , num 20.3 , 20.7 , 20.9 (v imp)

## ch 21

- mass defect and binding energy
- solid state detector
- wilson cloud chamber
- gm counter

ex 21.1 , num 21.2 ( v imp ) , 21.8 ( v imp )

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