RAHEIN EDUCATION
www.raheineducation.com
PHYSICS

RAHEIN EDUCATION PVT. LTD.

CONTACT: 9205010851

Website: www.raheineducation.com

PHYSICS MOCK TEST

BY

Asst. Prof. Tarun Kumar Gautam

(B.Tech, M.Tech, PhD (P))

Currently working in Jamia Hamdard, (HSC), Delhi

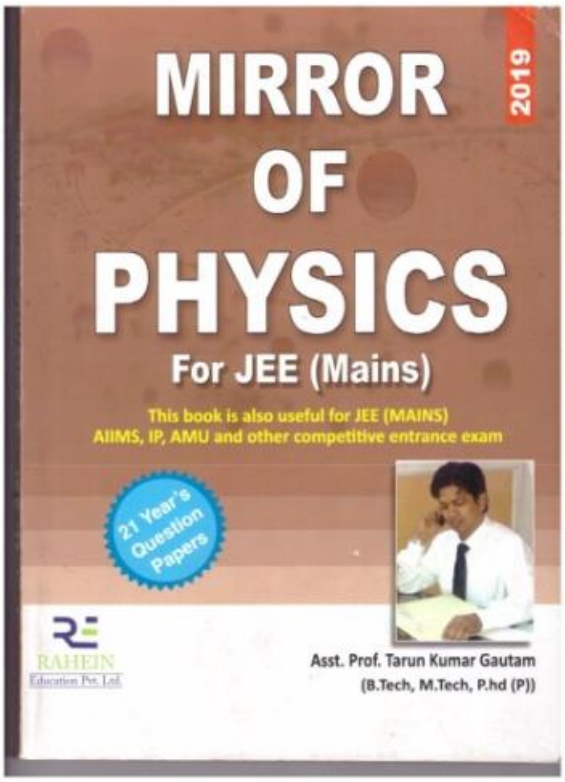
Working on Nano Technology with Rise University, USA

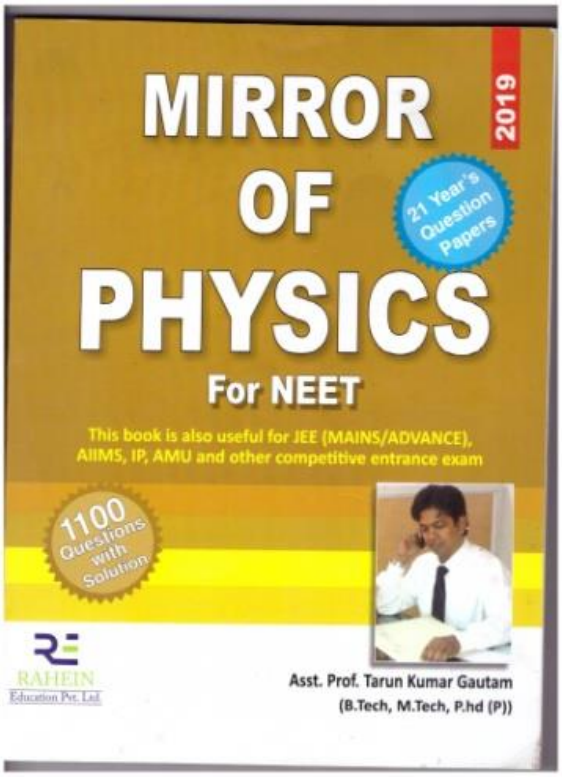
Author of 8 books regarding Physics and Engineering Subject.

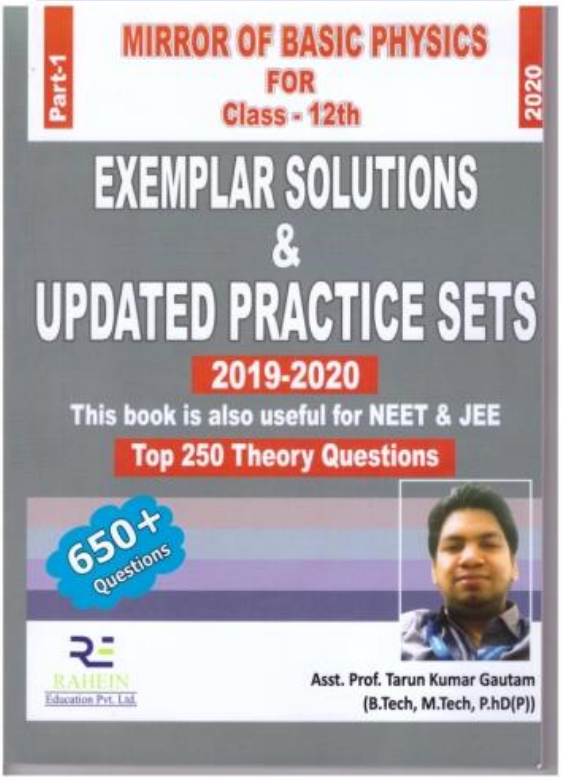
Ex-Faculty of Rajshree Institute of Management & Technology (RMIT), Braeilly, Uttar Prdesh

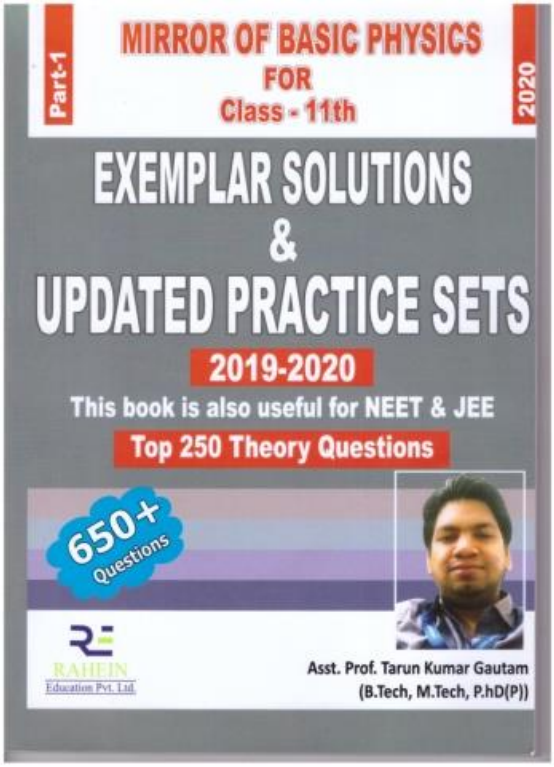
Ex-Faculty of Assistant professor in Krishna Engineering Collage (KEC), Ghaziabad, Uttar Prdesh

Member of Educational Project in University of Petroleum and Energy Studies (UPES), UK


MIRROR OF PHYSICS
2019
For JEE (Mains)
This book is also useful for JEE (MAINS)
AIIMS, IP, AMU and other competitive entrance exam
21 Year's Question Papers
RAHEIN Education Pvt. Ltd.
Asst. Prof. Tarun Kumar Gautam
(B.Tech, M.Tech, P.hd (P))


MIRROR OF PHYSICS
2019
For NEET
This book is also useful for JEE (MAINS/ADVANCE),
AIIMS, IP, AMU and other competitive entrance exam
21 Year's Question Papers
1100 Questions with Solution
RAHEIN Education Pvt. Ltd.
Asst. Prof. Tarun Kumar Gautam
(B.Tech, M.Tech, P.hd (P))


Part-1
MIRROR OF BASIC PHYSICS
FOR
Class - 12th
2020
EXEMPLAR SOLUTIONS
&
UPDATED PRACTICE SETS
2019-2020
This book is also useful for NEET & JEE
Top 250 Theory Questions
650+ Questions
RAHEIN Education Pvt. Ltd.
Asst. Prof. Tarun Kumar Gautam
(B.Tech, M.Tech, P.hD(P))


Part-1
MIRROR OF BASIC PHYSICS
FOR
Class - 11th
2020
EXEMPLAR SOLUTIONS
&
UPDATED PRACTICE SETS
2019-2020
This book is also useful for NEET & JEE
Top 250 Theory Questions
650+ Questions
RAHEIN Education Pvt. Ltd.
Asst. Prof. Tarun Kumar Gautam
(B.Tech, M.Tech, P.hD(P))

Mock Test – 4

CLASS – XII

SECTION – A

1) A telescope has an objective lens of focal length 200 cm and an eyepiece with focal length 2 cm. If this telescope is used to see a 50 m tall building at a distance of 2 km, what is the height of the image of the building formed by the objective lens?

(a) 5 cm (b) 10 cm

(c) 1 cm (d) 2 cm

2) Let A = light obtained by stimulated emission and B = light obtained by spontaneous emission, then

(a) A is incoherent, B is incoherent (b) A is incoherent, B is coherent

(c) A is coherent, B is coherent (d) A is coherent, B is incoherent

3) The momentum of a proton is P. The corresponding wavelength is:

(a) $\frac{h}{P}$ (b) hP

(c) $\frac{P}{h}$ (d) $\frac{h}{\sqrt{P}}$

4) The ground state energy of hydrogen atom is -13.6 eV. When its electron is in the first excited state, its excitation energy is:

(a) 3.4 eV (b) 6.8 eV

(c) 10.2 eV (d) 0

5) Neutrino is a particle with

(a) chargeless property and has no spin (b) chargeless property and has spin

(c) chargeless like electron and has spin (d) the same as neutron

6) With increase in temperature, the electrical conductivity of an intrinsic semiconductor:

(a) Increases (b) decreases

(c) first increases and then decreases (d) first decreases and then increases

7) If the reverse voltage in a diode is increased the width of depletion region:

(a) Increase (b) decrease

(c) Fluctuates (d) does not change

8) In an unbiased p-n junction, electrons diffuse from n- region to p- region because_____ .

(a) electrons travel across the junction due to potential difference

(b) electron concentration in n- region is more as compared to that in p- region

(c) only electron move from n to p region and not the vice versa

(d) holes in p- region attract them.

9) Sketch the variation of intensity of the interference pattern in Young's double slit experiment.

10) Give the significance of Davisson – Germer experiment.

Or

Define wave packet.

11) Why is the frequency of outgoing and incoming signals different in a mobile phone?

12) What is the shortest wavelength present in the Paschen series of spectral lines?

SECTION – B

13) Write the conditions for observing a rainbow. Show, by drawing suitable diagrams, how one understands the formation of a rainbow.

Or

Explain, with the help of a diagram, the basic processes involved in the formation of p-n junction. Write briefly how the depletion region is developed.

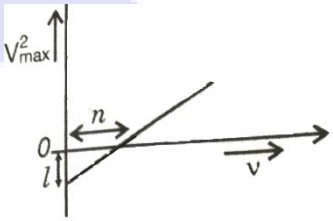
SECTION – C

14) (a) Give a brief description of the basic elementary process involved in the photoelectric emission in Einstein's picture.

(b) When a photosensitive material is irradiated with the light of frequency v, the maximum speed of electrons is given by $V_{max.}$ A plot of $V^2_{max.}$ is found to vary with frequency v as shown in the figure.

Use Einstein's photoelectric equation to find the expression for:

(i)Planck's constant and (ii) work function of the given photosensitive material, in terms of the parameters *l*,*n* and mass *m* of the electron.



15) Draw the circuit diagram to obtain forward bias characteristics of a p-n junction and discuss the forward bias characteristics of it.

Or

In a Zener regulated power supply a Zenere diode with V_Z = 0.6 V is used for regulation. The load current is to be 4.0 mA and the unregulated input is 10 V. What should be the value of series resistor R_S?

16) In the experiment on diffraction due to a single slit, show that

(i) the intensity of diffraction fringes decreases as the older (n) increases.

(ii) angular width of the central maximum is twice that of the first order secondary maximum.

17) How does the fringe width of interference fringes change, when the whole apparatus of young's experiment is kept in water (refractive index 4/3)?

Or

A small telescope has an objective lens of focal length 150cm and an eye piece of focal length 5 cm. If this telescope is used to view a 100m high tower 3 km away, find the height of the final image when it is formed 25 cm away from the eyepiece.

SECTION – D

18) Explain the principle, construction and working of a nuclear reactor.

Or

Explain constitution of atomic nucleus. Write difference between nuclear fission and radioactivity.

19) (a) How does an unpolarized light incident on a Polaroid get polarized ?

Describe briefly, with the help of a necessary diagram, the polarization of light by reflecting from a transparent medium.

(b) Two polaroids 'A' and 'B' are kept in crossed position. How should a third Polaroid 'C' be placed between them so that the intensity of polarized light transmitted by Polaroid B reduces to $1/8^{th}$ of the intensity of unpolarized light incident on A?

Or

The image formed in a convex mirror is always erect and virtual whatever be the position of the object.

(a) Draw the ray diagram showing virtual image formation in a concave mirror.

(b) Derive an equation showing the relation between u, v and f for a concave mirror, where u, v and f have their usual meanings. Draw the necessary diagram.

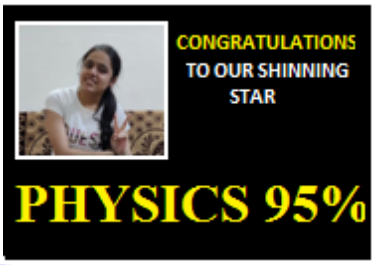
(c) An object is placed at a distance of 70 cm from a convex mirror of focal length 45 cm.

(i)Find the distance at which the image is formed.

(ii) What is the magnification of image?

RAHEIN EDUCATION
www.raheineducation.com
PHYSICS

CBSE RESULT 2020



Special Physics for NEET/JEE

Timing: 8:30a.m. to 10:30a.m. [Monday to Friday]

Saturday: Test

Fees: Rs. 25,000 and Online Test Series Rs. 1,000

Place: Rahein Education Pvt. Ltd.

Contact us: 9205010851, 9711833446

For Free Download Notes: www.raheineducation.com

E-mail: tarunkumar.csengg@gmail.com