Annual Plans

Department of Physics

KSN Govt Degree College(W), Ananathapuramu.

Action plan for the Academic year 2014-2015

Department Action plan: Department of Physics

A. **Lecturer wise Activity**

1) Guest Lectures	:	Guest Lecture –Sept2014
2) Study projects	:	Study projects- Dec 2014
3) Peer teaching (To same group)	:	August-2014 Oct -2014
4) Analytical Assignments	:	Sep -2014 Oct -2014
5) Student seminars	:	Sept- 2014 Oct -2014 Nov-2014
6) You Tube Lectures	:	Aug -2014 Oct -2014
7) PPTs show	:	Sept -2014 Nov -2014

B. **Dept –wise Activity:**

Extension Lectures	: Each Dept:	2(Oct, Dec 2014)
Field Trips	: Each Dept:	2(Nov2014, Jan 2015)
Project workds	: Each Dept:	1
Peer Teaching(To other Groups)	:Each Dept:	2(Oct, Nov 2014)
Talent Show	:Each Dept:	2(Nov 2014, Feb2015)
(Base is ward counseling data)		

C. **Quiz:**

Class Level - In Each Paper	:	1(Nov2014)
Dept. level - Two	:	(Dec, Jan 15)
College Level - One	:	Jan15

11/4/14

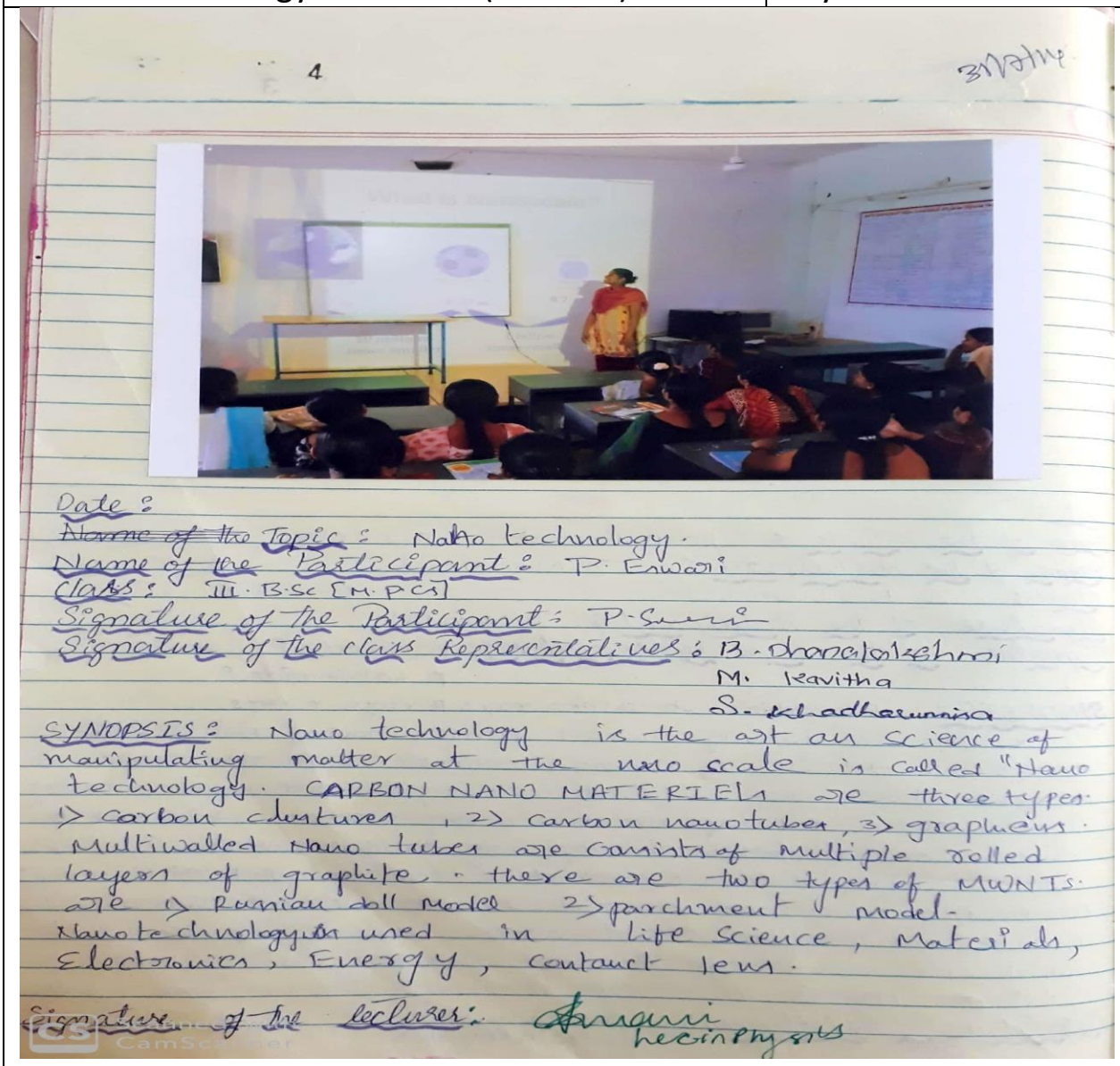
PRINCIPAL
KSN Govt. Degree College (Women)
ANANTAPUR.

11/4/14

Annual Plans

Department of Physics

31-07-14 Student Seminar Nano Technology P. Eswari (III MPCs)	S. Pavani, Lecturer in Physics



4

Date :
~~Name of the~~ Topic : Nano technology.
Name of the Participant : P. Eswari
Class : III. B.Sc [M.P.Cs]
Signature of the Participant : P. Eswari
Signature of the class Representatives : B. Dhanalakshmi
M. Keavitha
S. Khadharunnisa

SYNOPSIS : Nano technology is the art an science of manipulating matter at the nano scale is called "Nano technology. CARBON NANO MATERIELS are three types. 1> carbon clusters, 2> Carbon nanotubes, 3> graphenes. Multiwalled Nano tubes are consists of multiple rolled layers of graphite. there are two types of MWNTs. are 1> Russian doll model 2> parchment model. Nanotechnology is used in life Science, Materials, Electronics, Energy, contanct lens.

Signature of the lecturer : Pavani
lecturer in Physics

Annual Plans

Department of Physics

31-07-14 Student Seminar Isotopes, Isobars ,Isomers M.Divyavani (IIIMPCs)	S. Pavani, Lecturer in Physics

STUDENT SEMINAR – 2014-15. Date : 31/7/14

III B.Sc [M.P.Cs]

1

(1)

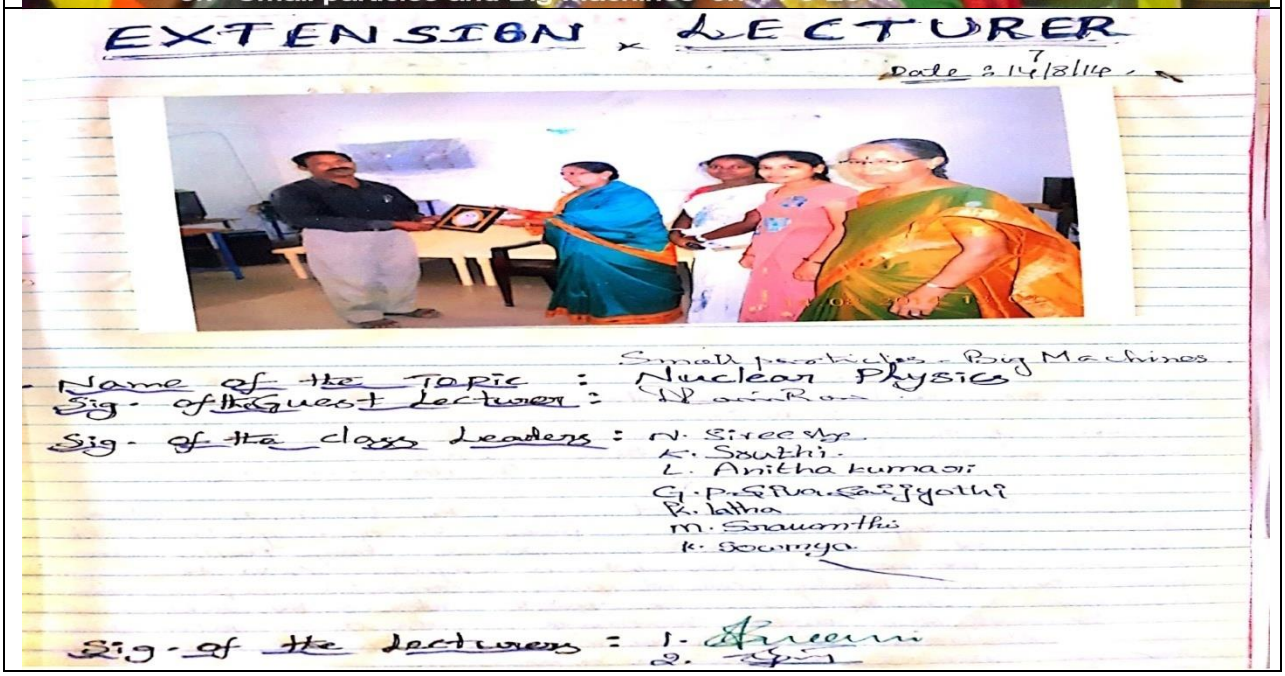
Name of the Topic : Isotopes, Isobars, Isomers, Isotones, Isodiaphers.
Name of the Student : M. Divyavani
Class : III B.Sc (MPCs)
Signature of the student : M. Divyavani
Signature of the class representatives : S. Yulavi
G. Aswani
N. Sujatha
S. Sheereen Banu

Sypn Synopsis : presented ppt
Isotopes : Those pair of atoms having same atomic number (z) but different mass number (A).
Isobars : Those atoms which having same mass number (A) but different atomic number (z)
Isomers : pair of atoms having same atomic number, mass number but different radioactive properties
Isotones : atoms whose nuclei have the same number of neutrons are called :
Signature of the lecturer . Pavani Lec in Physics

Annual Plans

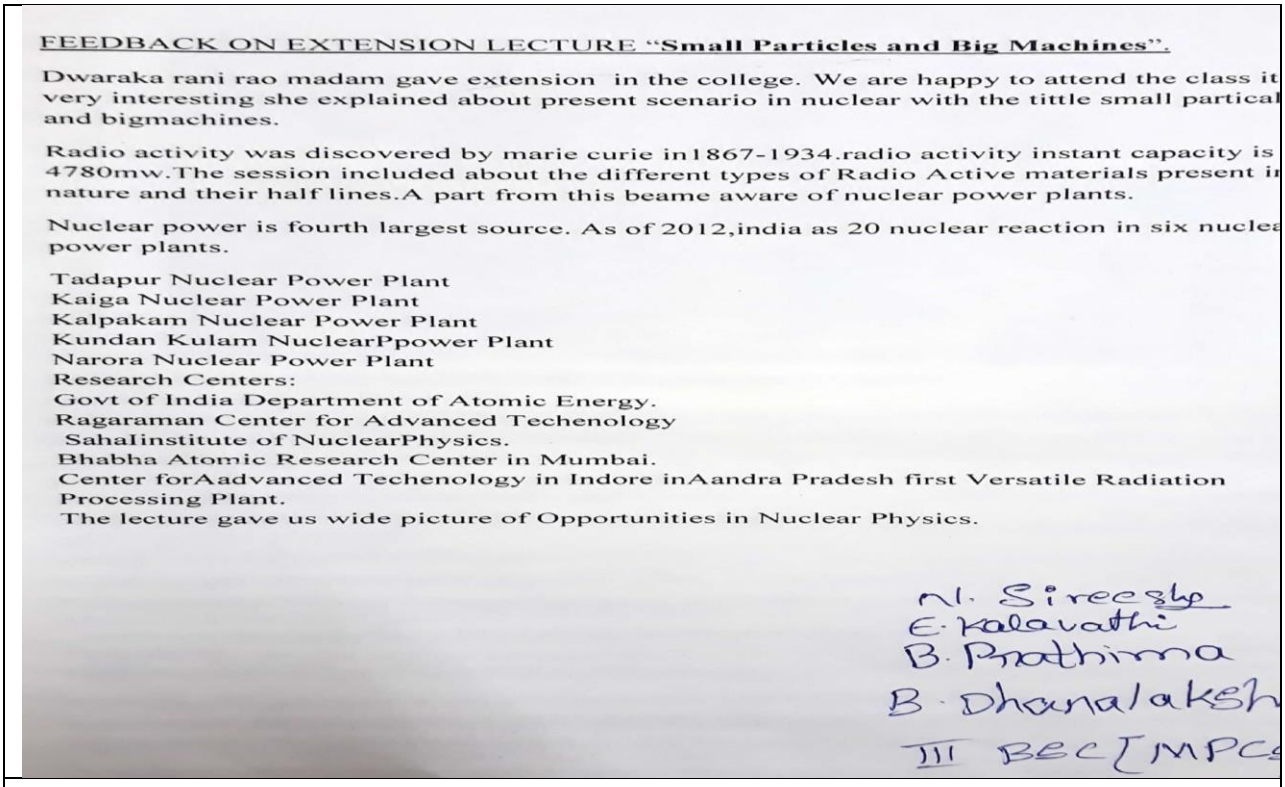
Department of Physics

DATE:14-08-2014 Extension Lecturer Dwaraka Rani Rao	Department of Physics



Annual Plans

Department of Physics



FEEDBACK ON EXTENSION LECTURE "**Small Particles and Big Machines**".

Dwaraka rani rao madam gave extension in the college. We are happy to attend the class it very interesting she explained about present scenario in nuclear with the tittle small partical and bigmachines.

Radio activity was discovered by marie curie in1867-1934.radio activity instant capacity is 4780mw.The session included about the different types of Radio Active materials present i nature and their half lines.A part from this beame aware of nuclear power plants.

Nuclear power is fourth largest source. As of 2012,india as 20 nuclear reaction in six nuclea power plants.

Tadapur Nuclear Power Plant
Kaiga Nuclear Power Plant
Kalpakam Nuclear Power Plant
Kundan Kulam NuclearPpower Plant
Narora Nuclear Power Plant
Research Centers:
Govt of India Department of Atomic Energy.
Ragaraman Center for Advanced Techenology
SahaIinstitute of NuclearPhysics.
Bhabha Atomic Research Center in Mumbai.
Center forAadvanced Techenology in Indore inAandra Pradesh first Versatile Radiation Processing Plant.
The lecture gave us wide picture of Opportunities in Nuclear Physics.

N. Sireesha
E. Kalavathi
B. Prathima
B. Dhanalaksh
III BSC [MPC

Annual Plans

Department of Physics

22-08-14 Hall Effect	Student Seminar B.Mamatha (III MPCs)	S. Pavani, Lecturer in Physics

STUDENT SEMINAR

8 III B.Sc [M.P.Cs] Date: 22/8/14

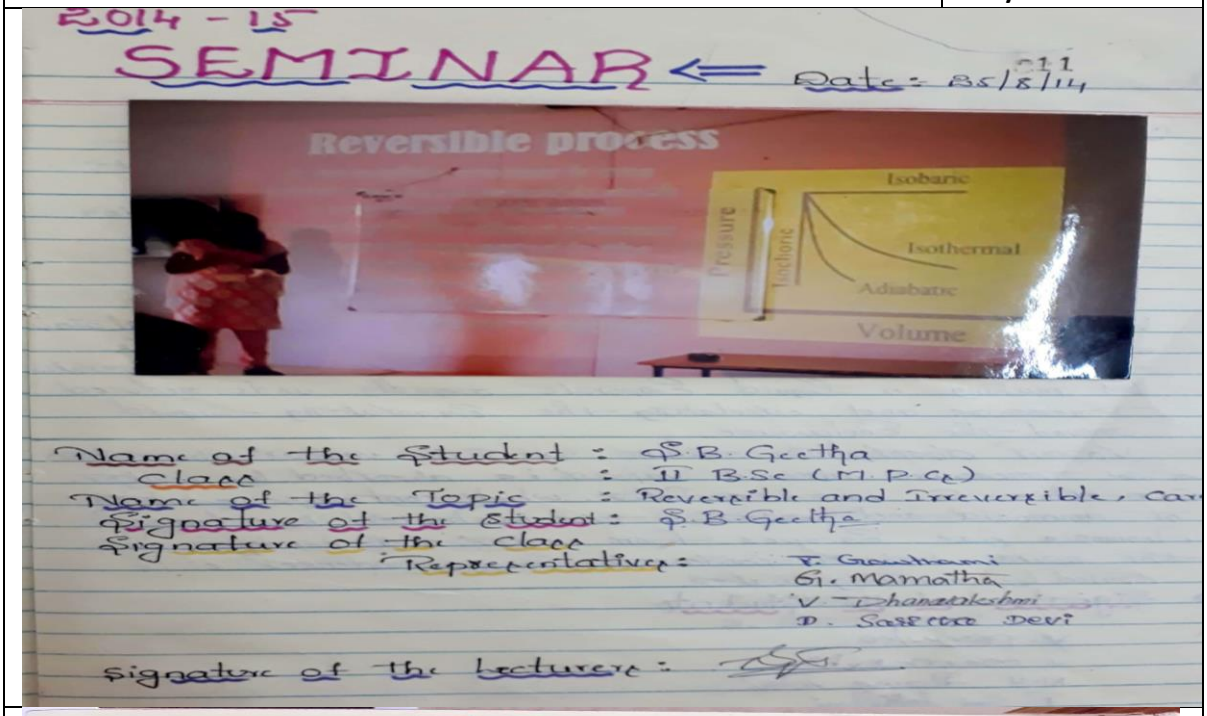
Topic : Hall Effect
Name of the student : B. Mamatha
Class : III B.Sc
Signature of the participant : B. Mamatha
Signature of the class Representatives : T. Nandini
D. Haseena Begum

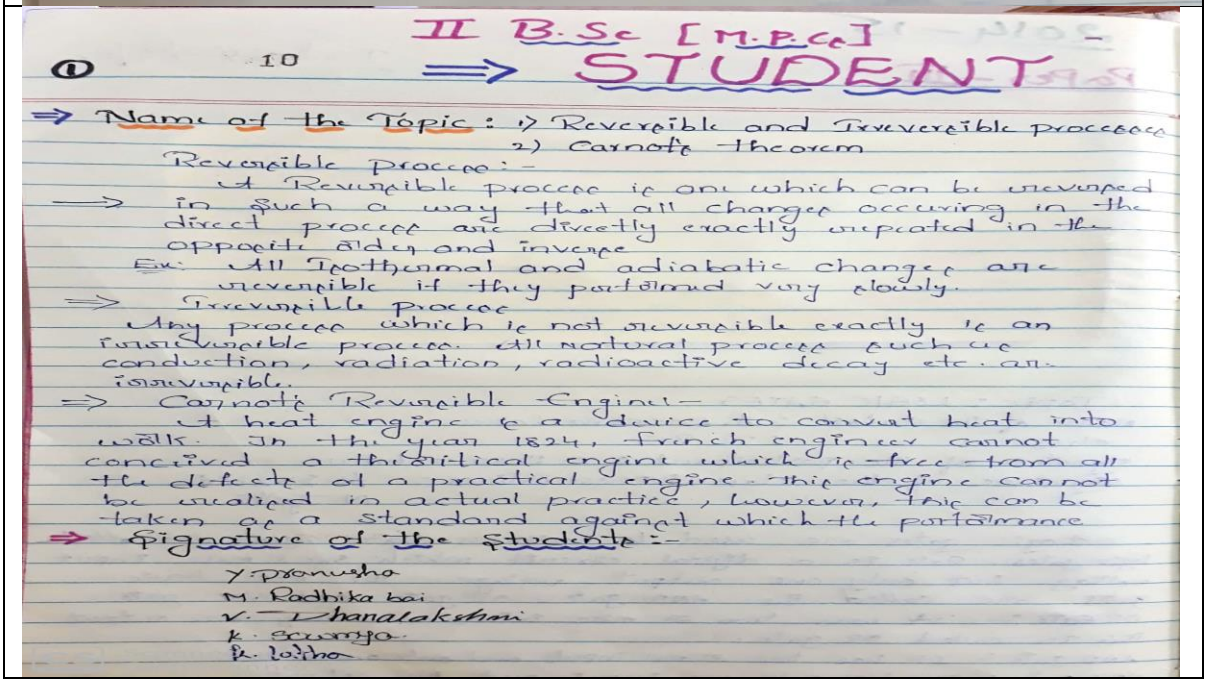
Hall Effect was discovered in 1879 by Edwin H. when current carrying conductor is placed in a magnetic field this Effect is a consequence of motion of charge particle in electric & magnetic fields. when a magnetic field is applied perpendicular to a current carrying conductor a potential difference is developed blw the opposite sides of the conductor. Thus for most of the metals the charge carries are negatively charged electrons. it is found in the case of Be, Zn, Cd The charge carries are positive holes.
→ the density of charge carries 'n' can also be found from the Eqn

Annual Plans

Department of Physics

25-08-14 Student Seminar Reversible & Irreversible S.B.Geetha (II MPCs)	S. Pavani, Lecturer in Physics

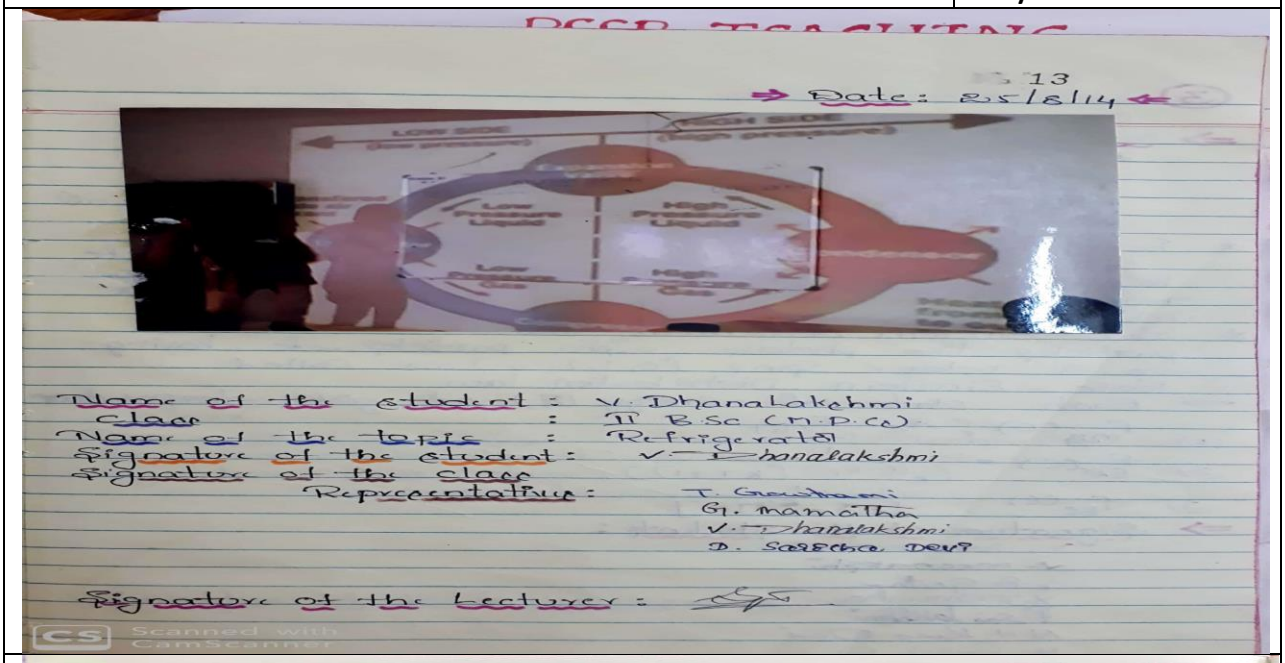


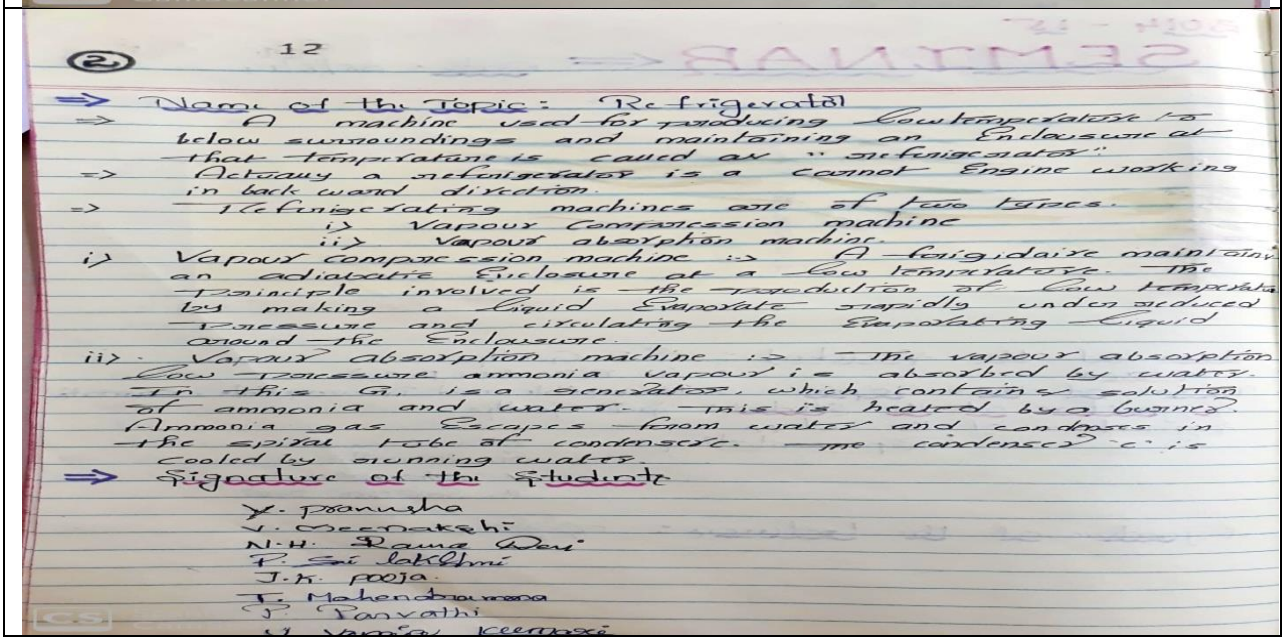


Annual Plans

Department of Physics

25-08-14 Refrigirators	Student Seminar V.Dhanalakshmi(II MPCs)	S. Pavani, Lecturer in Physics





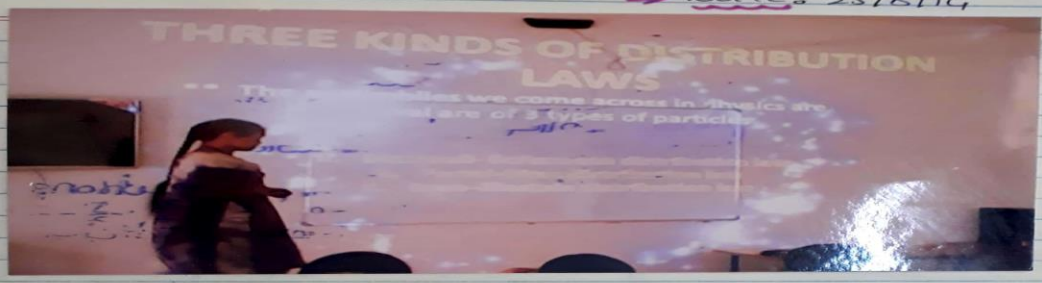
Annual Plans

Department of Physics

25-08-14 Statistical mechanics	Student Seminar B.Varalakshmi(IIMPCs)	Pavani, Lecturer in Physics

15

⇒ Date: 25/8/14



Name of the student : B. Varalakshmi
Class : II B.Sc (M.P.Cs)
Name of the Topic : Statistical Mechanics
Signature of the student : B. Varalakshmi
Signature of the class Representatives : T. Gautami
G. Mamatha
V. Dhanalakshmi
D. Sarecha Devi

Signature of the Lecturer :

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⇒ Name of the Topic: Statistical Mechanics

* There are Three kinds of most probable distribution laws These are

* Maxwell – Boltzmann Distribution law:–
This law applies to particles That are all idential but are distinguishable

* Fermi – Dirac Distribution law:–
Particles like electrons photons, neutrons. etc have half odd integral such as $\pm\left(\frac{3}{2}, \frac{5}{2}, \ldots\right)$ and obey paulis exclusion principle such particles are called fermi – Dirac

* Bose – Einstein Distribution law:–
particles like photons alpha particles ..etc, having zero or integer Spins (0, 1, 2 ..) are called Bose – Einstein Distribution law

⇒ Each state of energy (E) at given temperature

(1) $f_{MB}(E) = A_c - E/KT$

(2) $f_{ED}(E) = \frac{1}{(e^{(E-E_F)}[KT+1])}$

(3) $f_{BC}(E) = \frac{1}{[e^{\alpha} e^{E/KT} - 1]}$

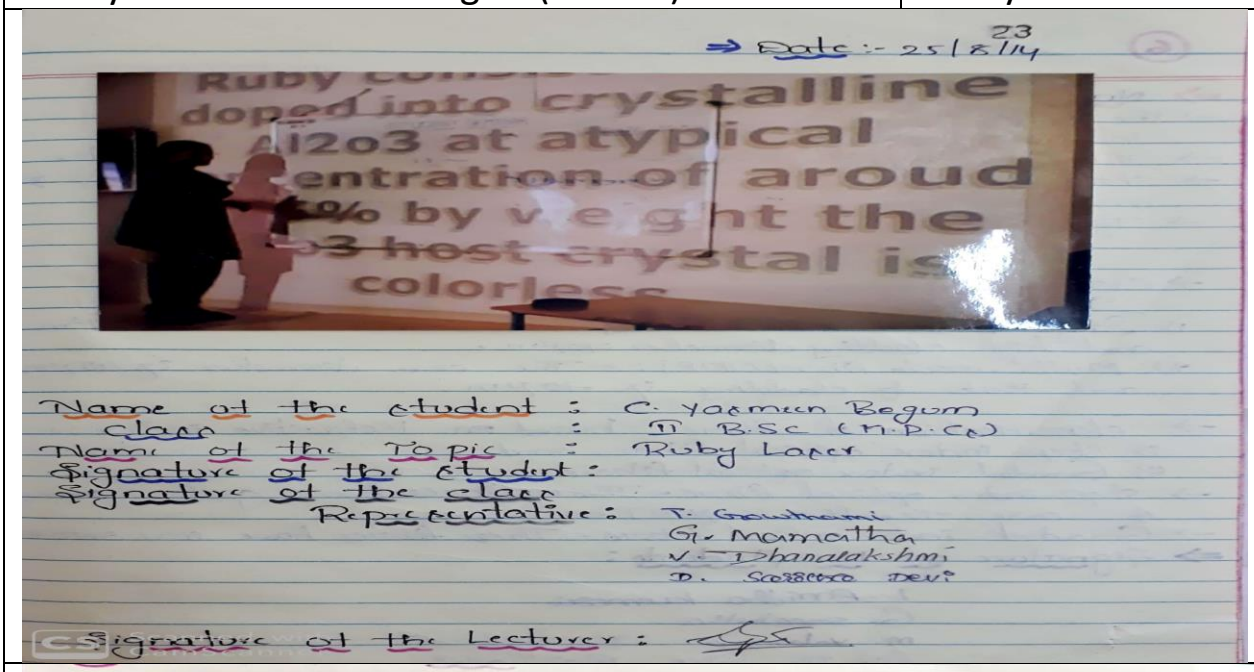
⇒ Signature of the Students :

V. Meenakshi
A.B Geetha
Y. Pranitha
P. Sai lakshmi
N.H. Rena Devi
M. Radhika bai

Annual Plans

Department of Physics

25-08-14 Student Seminars Ruby Laser C.Yasmumbegum(IIMPCs)	S. Pavani, Lecturer in Physics



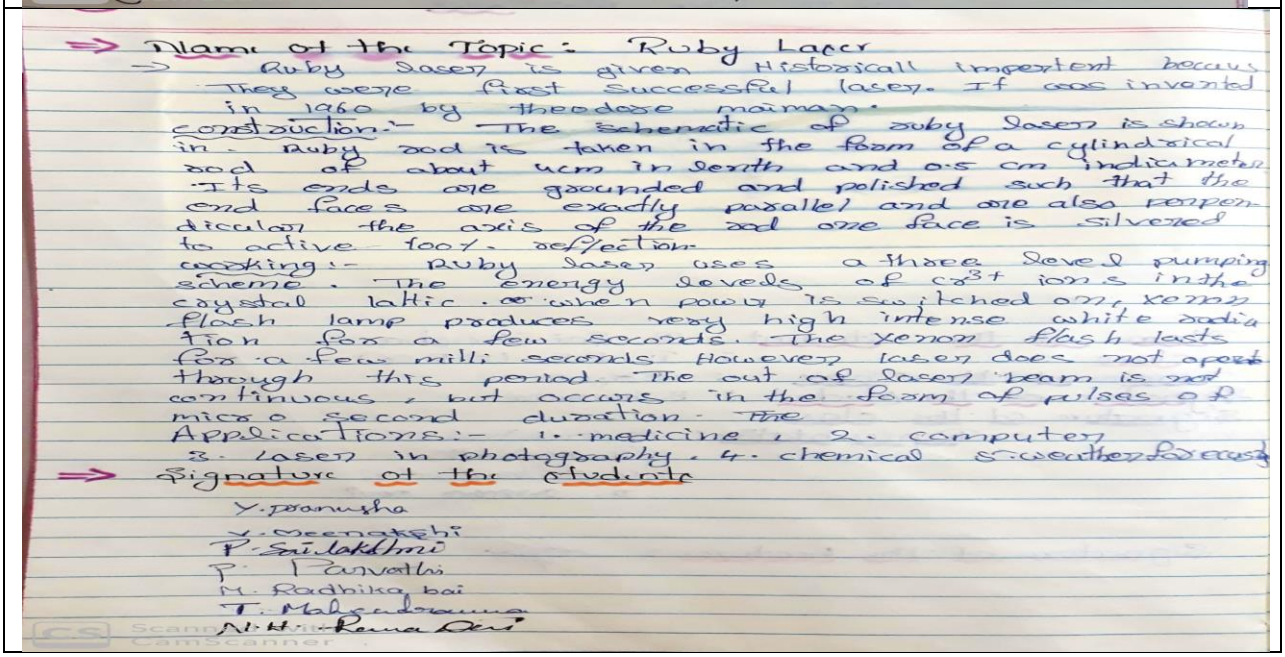
23

⇒ Date :- 25/8/14

doped into crystalline
Al2o3 at atypical
entration of aroud
% by weight the
3 host crystal is
colorless

Name of the student : C. Yasmeen Begum
Class : II B.Sc (M.P.C.s)
Name of the Topic : Ruby Laser
Signature of the student :
Signature of the class Representative : T. Gowthami
G. Mamaitha
V. Dhanalakshmi
D. Sasikala Devi

Signature of the Lecturer :



⇒ Name of the Topic : Ruby Laser

→ Ruby laser is given Historicall Imperteant because They were first successful lasey. It was invented in 1960 by theodore maiman.

construction :- The schematic of ruby laser is shown in. Ruby rod is taken in the form of a cylindrical rod of about 4cm in lenth and 0.5 cm in diameter. Its ends are grounded and polished such that the end faces are exactly parallel and are also perpendicular the axis of the rod one face is silvered to active 100% reflection.

working :- Ruby laser uses a three level pumping scheme. The energy levels of cr^{3+} ions in the crystal lattic. When power is switched on, xenon flash lamp produces very high intense white radiation for a few seconds. The xenon flash lasts for a few milli seconds However laser does not operate through this period. The out of laser beam is not continuous, but occurs in the form of pulses of micro second duration. The

Applications :- 1. medicine, 2. computer
3. Laser in photography. 4. chemical 5. weather forecast

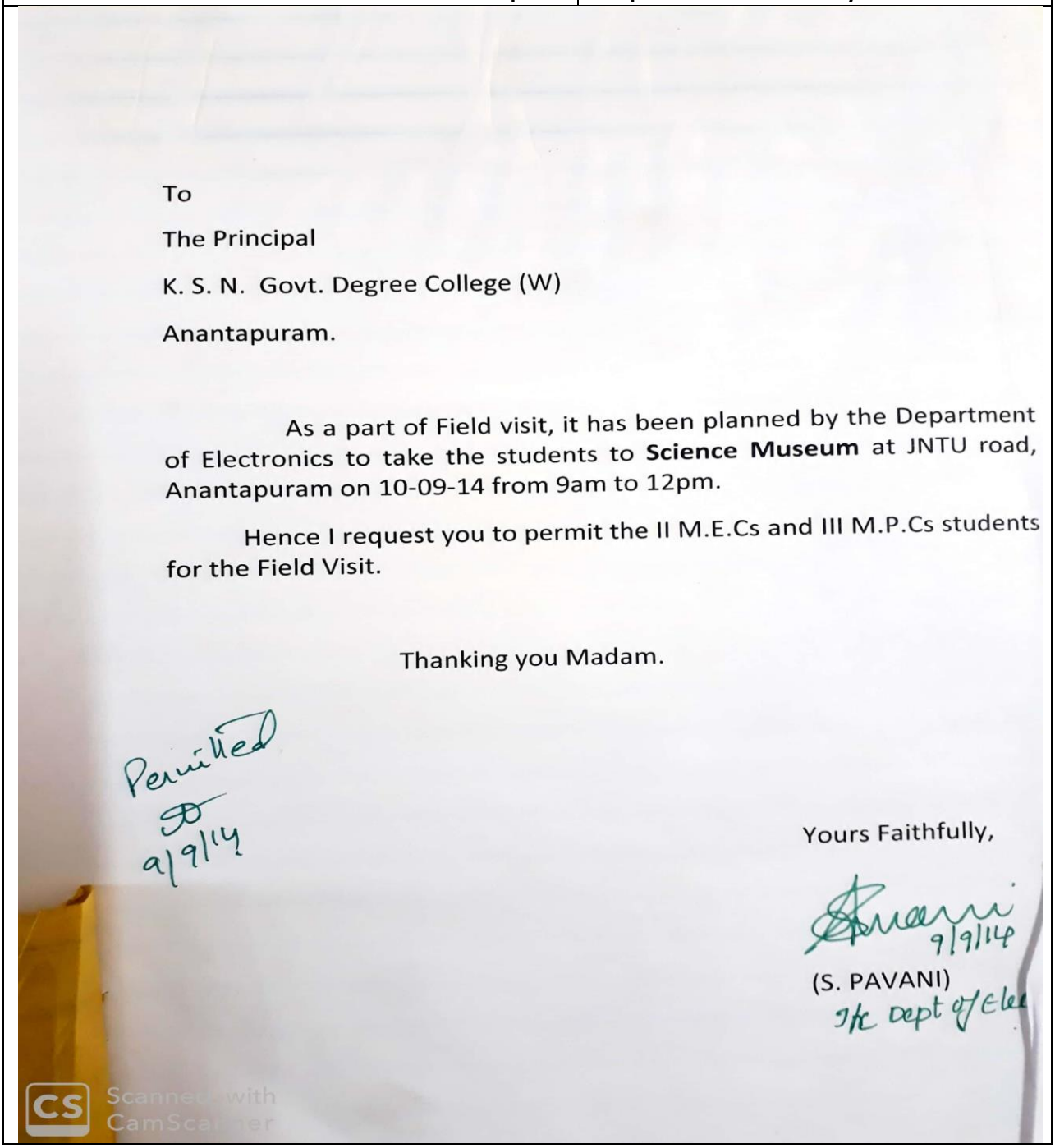
⇒ Signature of the students

Y. pranusha
V. Seenakshi
P. Sailakshmi
P. Parvathi
M. Radhika bai
T. Mahendramma
N. H. Rama Devi

Annual Plans

Department of Physics

DATE:10-9-2014	Field Trip	Department of Physics



To

The Principal

K. S. N. Govt. Degree College (W)

Anantapuram.

As a part of Field visit, it has been planned by the Department of Electronics to take the students to **Science Museum** at JNTU road, Anantapuram on 10-09-14 from 9am to 12pm.

Hence I request you to permit the II M.E.Cs and III M.P.Cs students for the Field Visit.

Thanking you Madam.

Permitted
9/9/14

Yours Faithfully,

9/9/14

(S. PAVANI)
IIc Dept of Elec

FIELD - VISIT

27

SCIENCE MUSEUM, Anantapurama

Class : III B.Sc & II B.Sc (MECs)
~~A field~~ (MPCs)

Signature of the class Representatives :

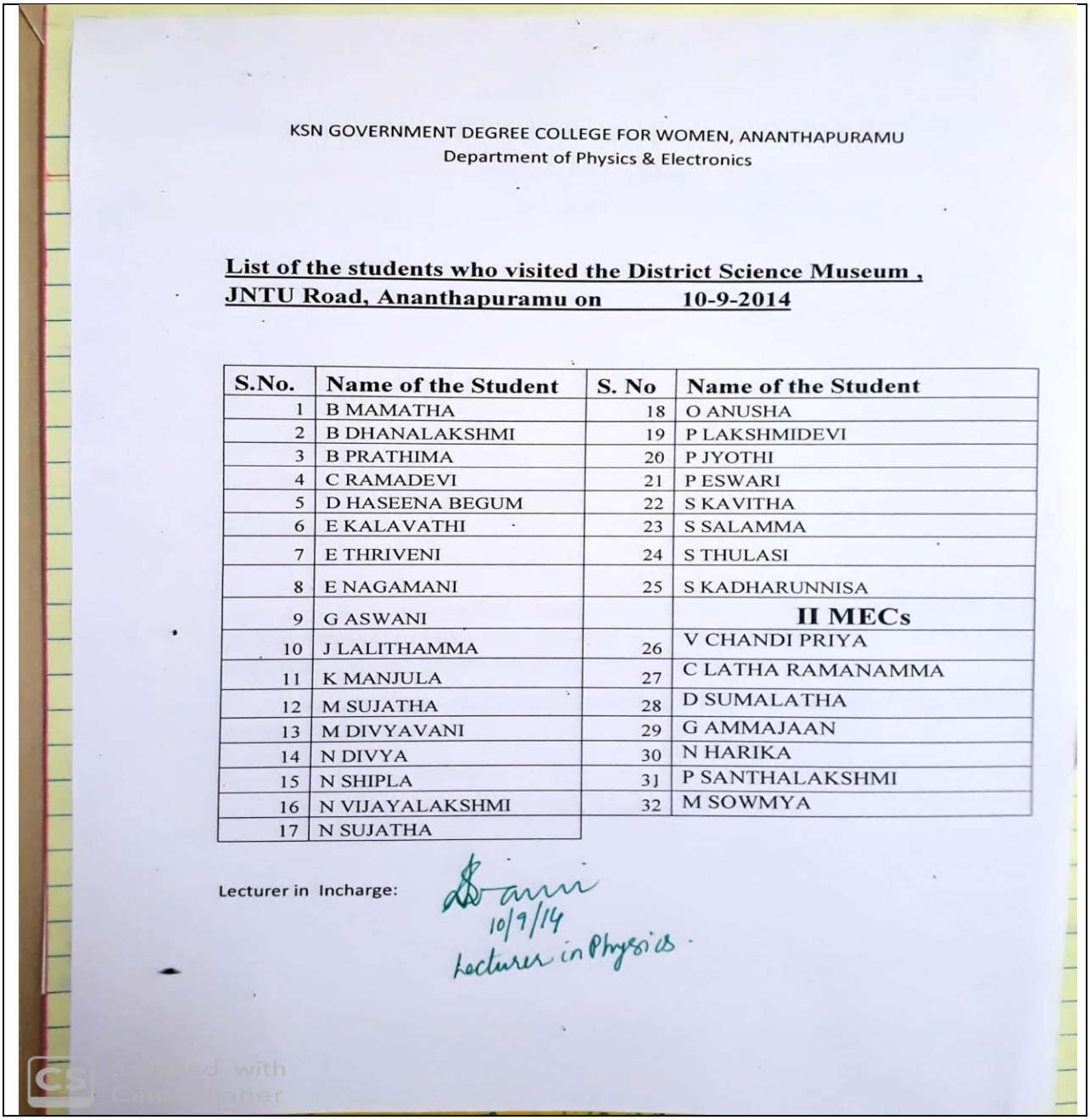
M. Soumya (I B.Sc) (MECs)
P. Santha Lakshmi (II B.Sc) (MECs)
D. Sumalatha (II B.Sc) (MECs)
B. Mamatha (III B.Sc) (MPCs)
P. Lakshmi devi (III BSc) (MPCs)

Rahmathulla Assistant Manager of the District Science Museum Explaining about various instruments that work based on Physics principles.

Signature of the lecturer : 1. 10/9/14.

Annual Plans

Department of Physics



KSN GOVERNMENT DEGREE COLLEGE FOR WOMEN, ANANTHAPURAMU
Department of Physics & Electronics

List of the students who visited the District Science Museum , JNTU Road, Ananthapuramu on 10-9-2014

S.No.	Name of the Student	S. No	Name of the Student
1	B MAMATHA	18	O ANUSHA
2	B DHANALAKSHMI	19	P LAKSHMIDEVI
3	B PRATHIMA	20	P JYOTHI
4	C RAMADEVI	21	P ESWARI
5	D HASEENA BEGUM	22	S KAVITHA
6	E KALAVATHI	23	S SALAMMA
7	E THRIVENI	24	S THULASI
8	E NAGAMANI	25	S KADHARUNNISA
9	G ASWANI		**II MECs**
10	J LALITHAMMA	26	V CHANDI PRIYA
11	K MANJULA	27	C LATHA RAMANAMMA
12	M SUJATHA	28	D SUMALATHA
13	M DIVYAVANI	29	G AMMAJAAN
14	N DIVYA	30	N HARIKA
15	N SHIPLA	31	P SANTHALAKSHMI
16	N VIJAYALAKSHMI	32	M SOWMYA
17	N SUJATHA		

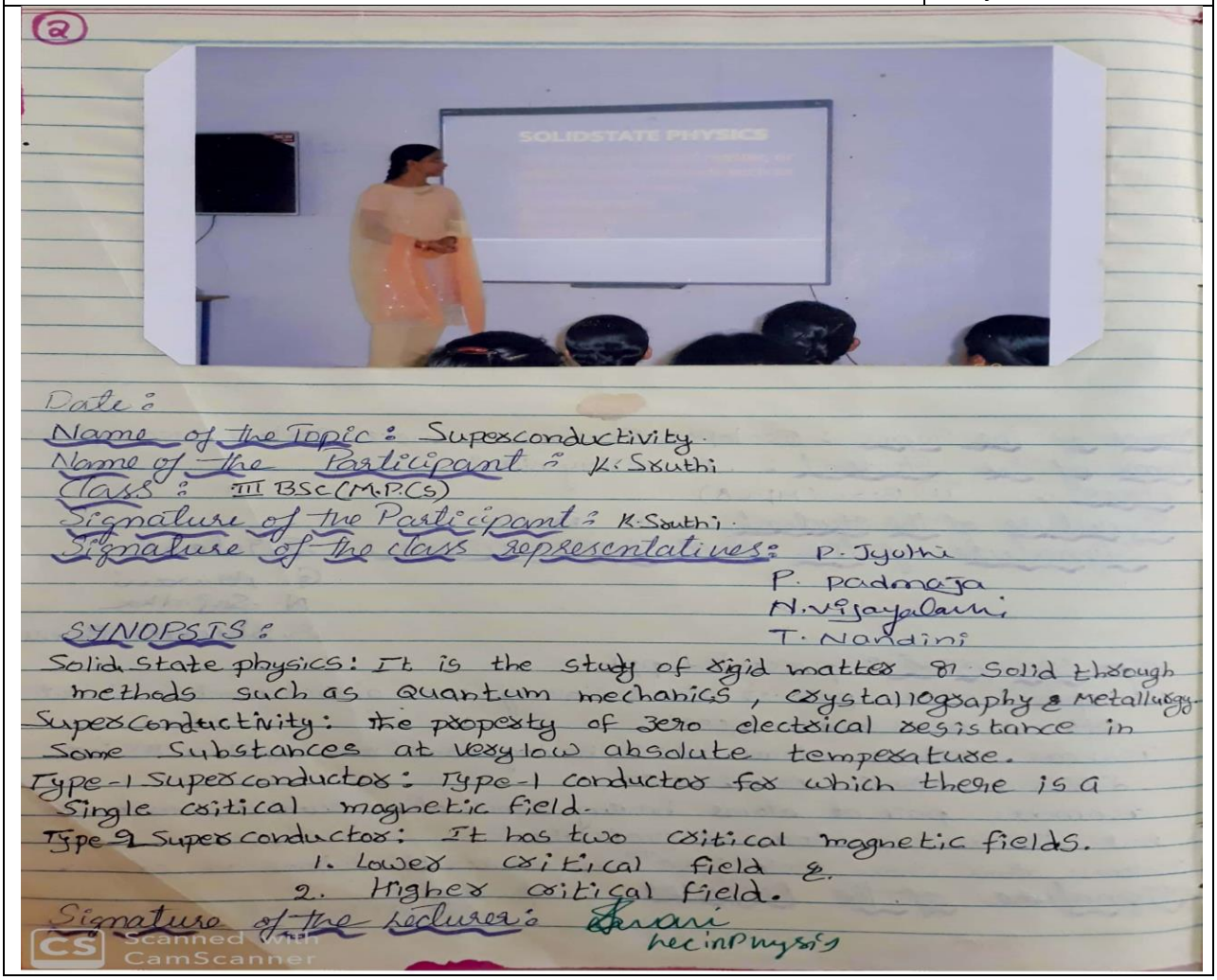
Lecturer in Incharge:

10/9/14
Lecturer in Physics.

Annual Plans

Department of Physics

21-09-14 Super Conductivity	Student Seminars K.Shruthi(IIIMPCs)	S. Pavani, Lecturer in Physics



Date :

Name of the Topic : Superconductivity.

Name of the Participant : K. Shruthi

Class : III BSc (M.P.Cs)

Signature of the Participant : K. Shruthi.

Signature of the class representatives : P. Jyothi
P. padmaja
N. Vijayalaxmi
T. Nandini

SYNOPSIS :

Solid State physics : It is the study of rigid matter or solid through methods such as Quantum mechanics, crystallography & Metallurgy.

Superconductivity : the property of zero electrical resistance in some substances at very low absolute temperature.

Type-1 Superconductor : Type-1 conductor for which there is a single critical magnetic field.

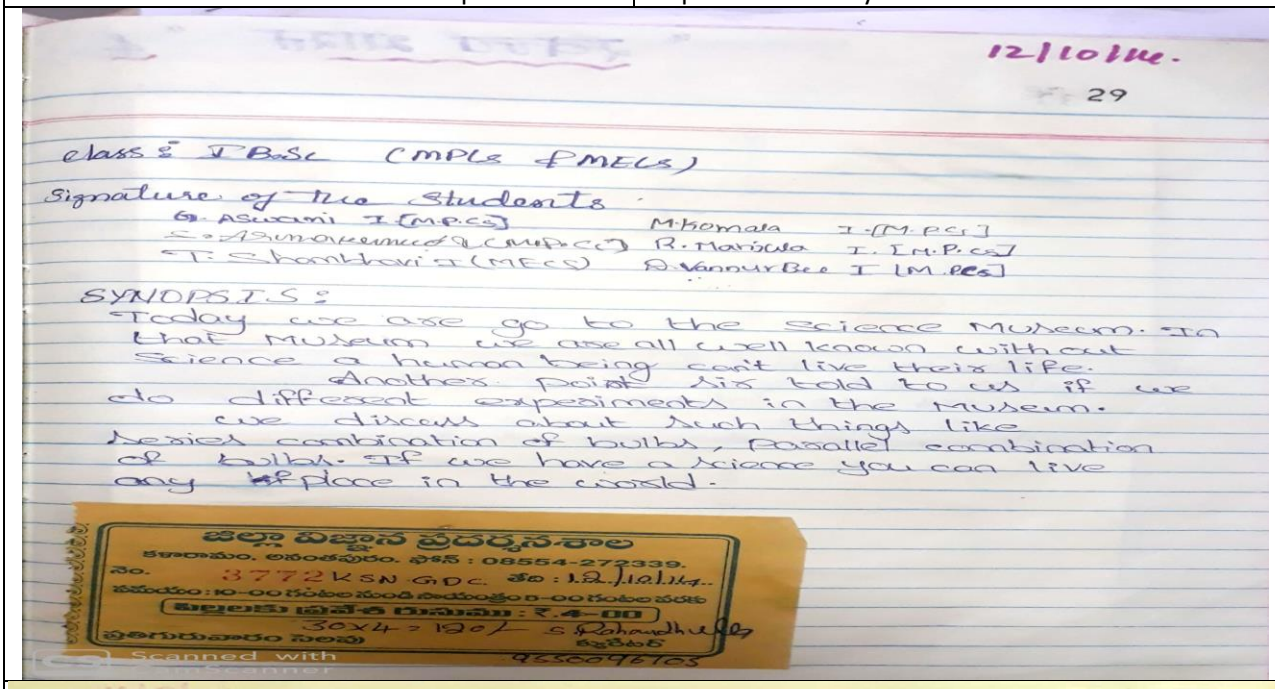
Type-2 Superconductor : It has two critical magnetic fields.
1. Lower critical field &
2. Higher critical field.

Signature of the lecturer : S. Pavani
Lec in Physics

Annual Plans

Department of Physics

DATE:12-10-2014	Field Trip	Department of Physics



12/10/14.

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Class : I B.Sc (MPCs & MECs)

Signature of the Students

G. Aswani I (MPCs) M. Komala I (MPCs)

S. Arunakumari I (MPCs) R. Manjula I (MPCs)

T. Shanthi I (MECs) D. Vanaja I (MPCs)

SYNOPSIS:

Today we are go to the Science Museum. In that Museum we are all well known without Science a human being can't live their life. Another point is told to us if we do different experiments in the Museum. We discuss about such things like Series combination of bulbs, Parallel combination of bulbs. If we have a science you can live any place in the world.

జిల్లా విజ్ఞాన ప్రదర్శన-శాల

కళాభవనం, అనంతపురం. ఫోన్ : 08554-272339.

No. 3772 KSN GDC. తేది : 12/10/14

ప్రవేశం : 10-00 గంటల నుండి సాయంత్రం 5-00 గంటల వరకు

ప్రవేశ రుసుం : ₹.4-00

30 x 4 = 120/-

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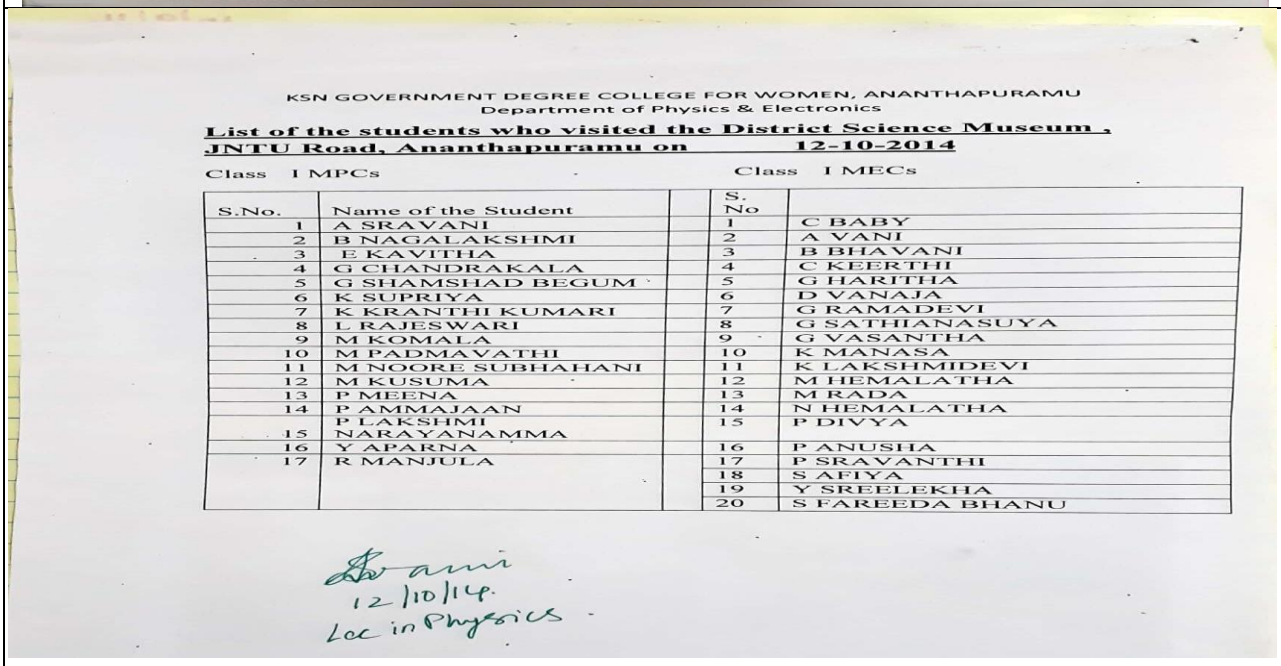

KSN GOVERNMENT DEGREE COLLEGE FOR WOMEN, ANANTHAPURAMU

Department of Physics & Electronics

List of the students who visited the District Science Museum , JNTU Road, Ananthapuramu on 12-10-2014

Class I MPCs

S.No.	Name of the Student
1	A SRAVANI
2	B NAGALAKSHMI
3	E KAVITHA
4	G CHANDRAKALA
5	G SHAMSHAD BEGUM
6	K SUPRIYA
7	K KRANTHI KUMARI
8	L RAJESWARI
9	M KOMALA
10	M PADMAVATHI
11	M NOORE SUBHAHANI
12	M KUSUMA
13	P MEENA
14	P AMMAJAAN
15	P LAKSHMI NARAYANAMMA
16	Y APARNA
17	R MANJULA

Class I MECs

S. No	
1	C BABY
2	A VANI
3	B BHAVANI
4	C KEERTHI
5	G HARITHA
6	D VANAJA
7	G RAMADEVI
8	G SATHIANASUYA
9	G VASANTHA
10	K MANASA
11	K LAKSHMIDEVI
12	M HEMALATHA
13	M RADA
14	N HEMALATHA
15	P DIVYA
16	P ANUSHA
17	P SRAVANTHI
18	S AFIYA
19	Y SREELEKHA
20	S FAREEDA BHANU

Aswani

12/10/14.

Lec in Physics

Annual Plans

Department of Physics

DATE:13-10-14	Guest Lecture	S. Pavani, Lecturer in Physics

13/10/14.

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GUEST LECTURE

Topic

Role of Science in Human Development

Signature of the Guest : M. Nagamalleswari

Signature of the Class Representatives

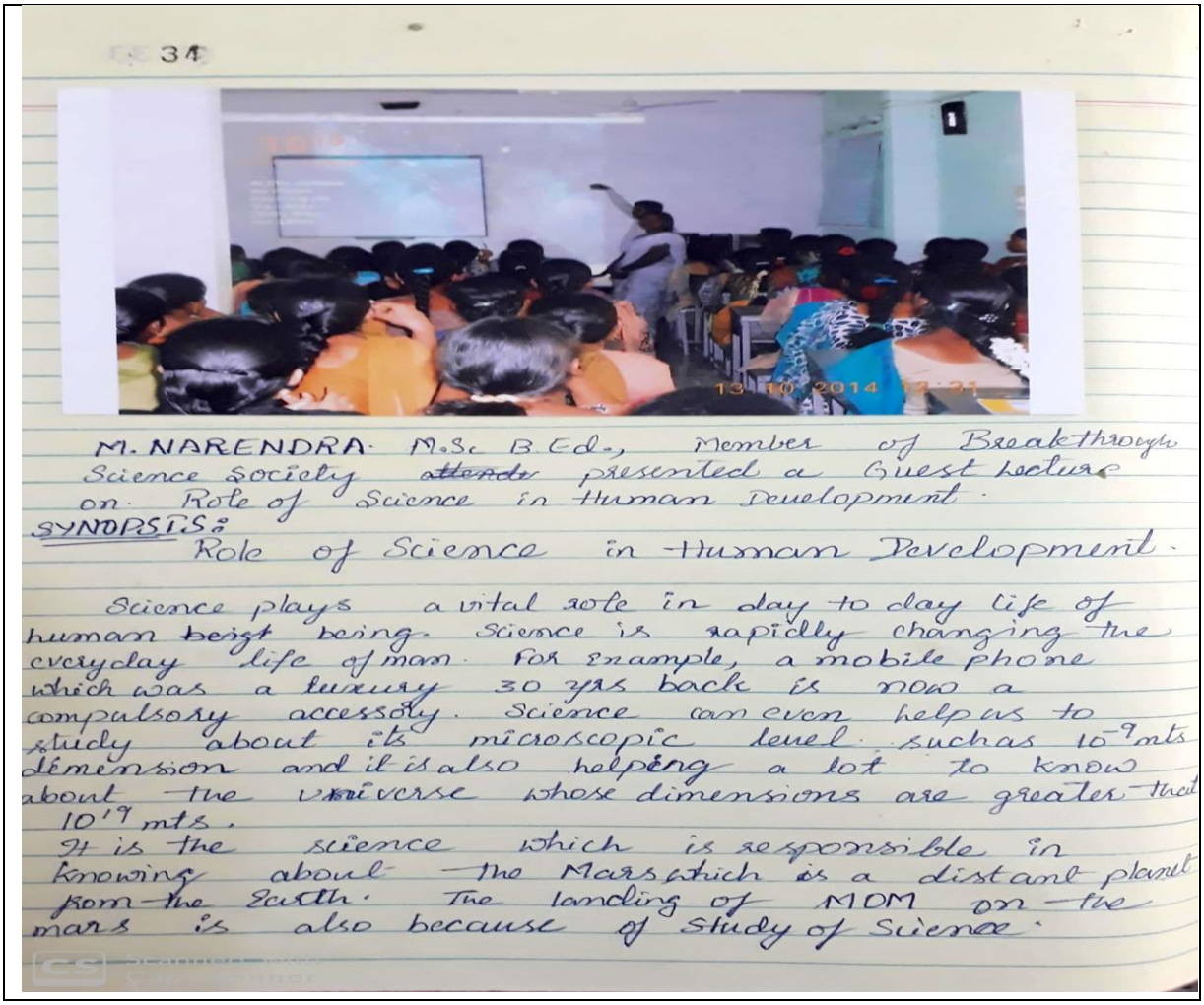
M. Komala
N. Meena
M. Sandhya
S. Ajiya

Signature of the lecturer :- S. Pavani
13/10/14 Lec in Physics

13/10/14

Annual Plans

Department of Physics



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M. NARENDRA M.Sc B.Ed., Member of Breakthrough Science Society ~~attended~~ presented a Guest lecture on Role of Science in Human Development.

SYNOPSIS:

Role of Science in Human Development.

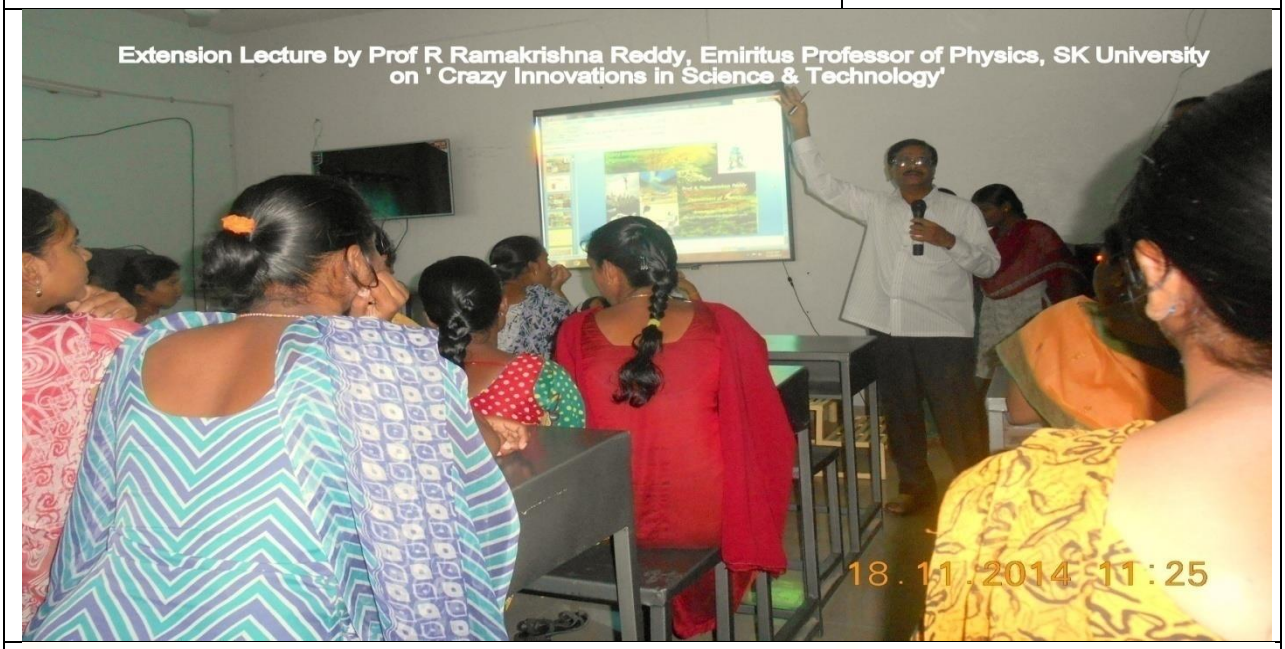
Science plays a vital role in day to day life of human ~~beings~~ being. Science is rapidly changing the everyday life of man. For example, a mobile phone which was a luxury 30 yrs back is now a compulsory accessory. Science can even help us to study about its microscopic level such as 10^{-9} mts dimension and it is also helping a lot to know about the universe whose dimensions are greater than 10^{19} mts.

It is the science which is responsible in knowing about the Mars which is a distant planet from the Earth. The landing of MOM on the mars is also because of study of Science.

Annual Plans

Department of Physics

DATE:14-08-2014	Extension	Department of Physics
Lecturer	Dwaraka Rani Rao	




ఈనాడు అనంతపురం

ఆదివారం 23 నవంబరు 2014

16 పేజీలు

శాస్త్ర సాంకేతిక రంగంలో ఊహకందని మార్పులు

మాట్లాడుతున్న ప్రిన్సిపల్ నిర్మల, పక్కన ఎమిరటస్ ఆచార్యులు రామకృష్ణారెడ్డి

Date: 18/11/14.

EXTENSION LECTURE 45

Topic: Crazy Innovations in Science and Technology

Guest: Prof. R. Ramakrishna Reddy

UGC – Emeritus Professor
Sri Krishna Devaraya University

Signature of the Guest: R. Ramakrishna Reddy

No.
Students of all B.Sc., attended.

Signature of the lecturer: 1.
(Dr. K. Ravi Kumar Reader in Physics)
2.
(S. Pavani Lec in Physics)
3.
(T. Syamala G.F in physics)
4.

Signature of the class Representatives:

I B.Sc (MPCs)
(MECs)
MPC. C.V. Anitha
II B.Sc: MPCs K. Sowmya
MECs. P. Santha Lakshmi
III B.Sc MPCs.

Annual Plans

Department of Physics

DATE:05-12-2014	QUIZ	Department Of Physics

PHYSICS QUIZ for II B.Sc [M.P.Cs]

Date : 5 - 12 - 2014

Round - 1 : Science Instruments

① Which instrument is used to measure altitudes in air crafts ? — Altimeter

② Name of the instrument to measure atmospheric pressure ? — Barometer

③ Which instrument is used to measure the position of spectral lines ? — Spectrometer

④ Alfred Nobel invented ? — Dynamite.

⑤ Nucleas sizes are expressed in a unit named? — Fermi

⑥ Which instrument is used very high temperature? — Pyrometer.

⑦ Which rays are used in Barcoding? — LASER

Round — 2 (Instruments & Inventions)

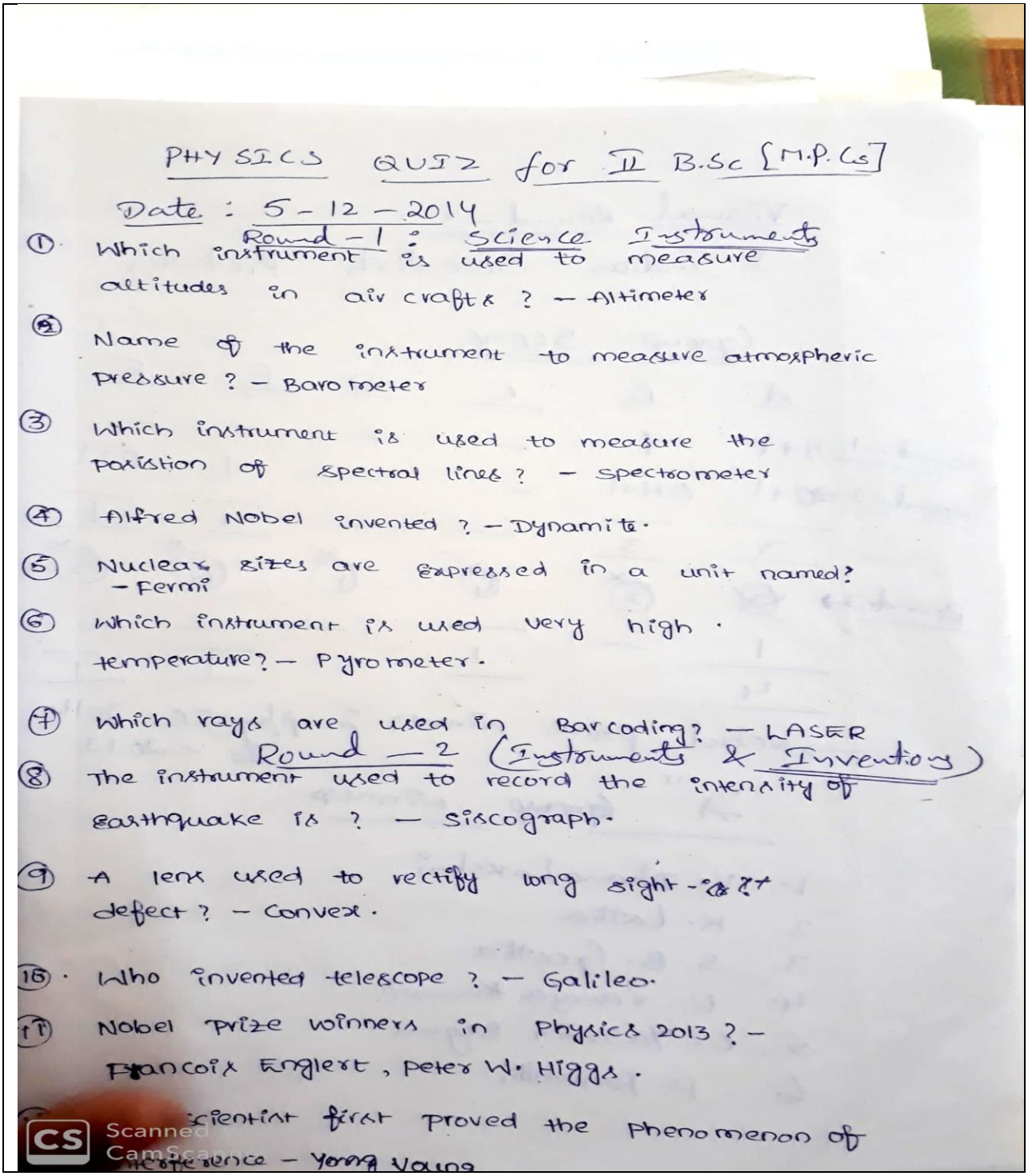
⑧ The instrument used to record the intensity of earthquake is ? — Siscograph.

⑨ A lens used to rectify long sight - defect ? — Convex.

⑩ Who invented telescope ? — Galileo.

⑪ Nobel prize winners in Physics 2013 ? — Francois Englert, Peter W. Higgs.

⑫ Scientist first proved the phenomenon of interference — Young Young



PHYSICS QUIZ for II B.Sc [M.P.Cs]

Date : 5-12-2014

Round-1 : Science Instruments

① Which instrument is used to measure altitudes in air crafts ? — Altimeter

② Name of the instrument to measure atmospheric pressure ? — Barometer

③ Which instrument is used to measure the position of spectral lines ? — Spectrometer

④ Alfred Nobel invented ? — Dynamite.

⑤ Nuclear sizes are expressed in a unit named? — Fermi

⑥ Which instrument is used very high temperature? — Pyrometer.

⑦ Which rays are used in Barcoding? — LASER

Round — 2 (Instruments & Inventions)

⑧ The instrument used to record the intensity of Earthquake is ? — Siscograph.

⑨ A lens used to rectify long sight - is ?? defect ? — Convex.

⑩ Who invented telescope ? — Galileo.

⑪ Nobel prize winners in Physics 2013 ? — Francois Englert, Peter W. Higgs.

⑫ Scientist first proved the phenomenon of interference — Young Young

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Department of Physics

Additional Input	N.Sulochana(IIIMPCs)	Department of physics

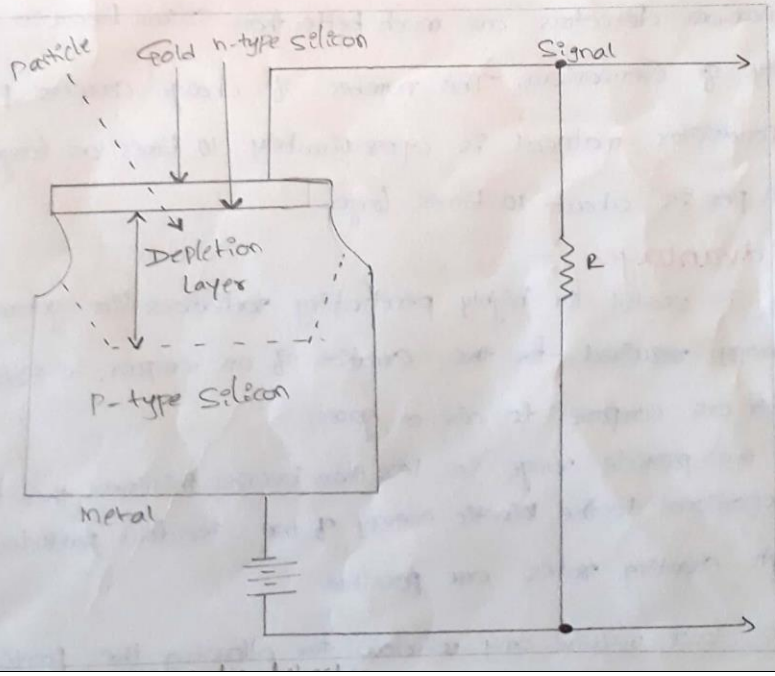
N. Sulochana
III B.Sc (M.P.C)

15-11-2014
Saturday

Assignment - 2

Solidstate Detector.

The Solidstate detector essentially possess a p-n diode. The diode is formed by depositing a n-type on a p-type Silicon as shown in fig. Contact is made with n-type Silicon layer by a thin evaporated film of gold, while the other side of p-type Silicon is coated with a metallic plating. In order to minimise the current flowing in the detector, when no radiation is striking it, a reverse biased is always used. The possitive bias applied to the gold film will push all the possitive charge carriers away from the junction and produce a depletion layer as indicated in the figure. The depletion layer contains almost no carriers of either sign.



Annual Plans

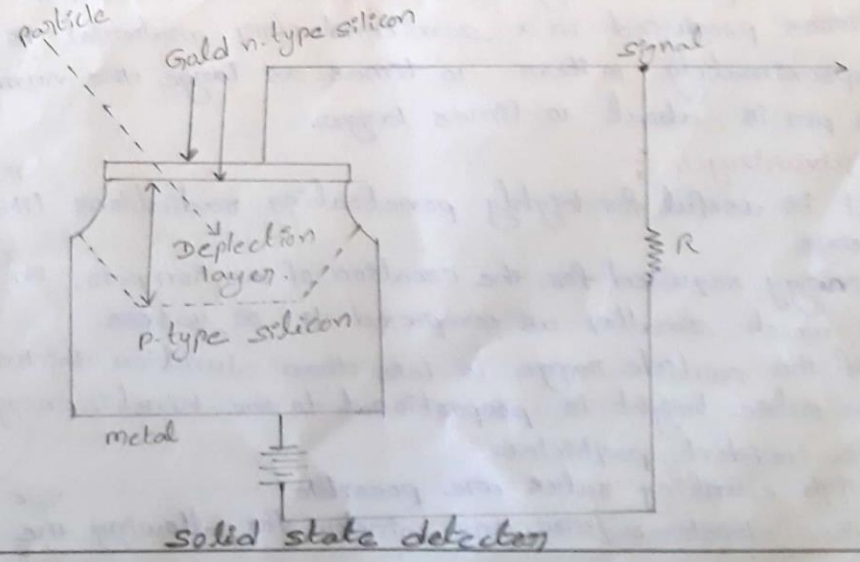
Department of Physics

Additional Input	Department of physics

III BSc. Assignment - I

Solid State Detector.

The solidstate detector essentially possess a p-n diode. The diode is formed by depositing a n-type on a p-type silicon as shown in fig. contact is made with n-type silicon layer by a thin evaporated film of gold. while the otherside of p-type silicon is coated with a metallic plating. In order to minimize the current flowing in the detector, when no radiation is striking it, a reverse based is always used. The possitive bias applied to the gold film will push all the possitive charge carries away from the junction and produce a deplection layer as indicated in the figure. the deflection layer contains almost no carries of either sign.



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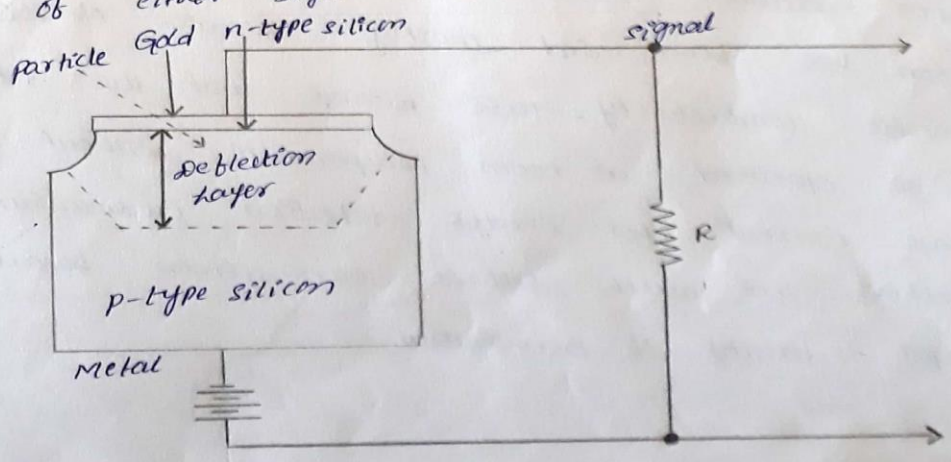
Department of Physics

Additional Input	N.Divya(IIIMPCs)	Department of physics

N. Divya
III B.Sc

Solid State Dector

The solid state detector essentially possess a p-n diode. The diode is formed by depositing a n-type silicon on a p-type silicon as shown in fig 10.9. contact is made within n-type silicon layer by a thin evaporated film of gold. while the other side of p-type silicon is coated with a metalic plating. In order to minimi the current flowing in the detector. when no radiation is striking it, a reverse biased diode is always used. the positive bias applied to the gold film will push all the positive charge carriers away from the junction and produce a depletion layer as indicated in the figure. the depelotion layer contains almost no carriers of either sign.



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Department of Physics

Additional Input B.Dhanalakshmi (IIIMPCs)	Department of physics

17/11/2014 B. Dhanalakshmi III BSc[MPCs] ASSIGNMENT-1

ENERGY RELEASED IN NUCLEAR FISSION

a heavy nucleus undergoes a fission process, a large amount energy is released together with the emission of neutrons which further produce fission. this energy is known as nuclear energy or atomic energy.

The amount of energy released in nuclear fission may be obtained by the method known as mass defect method is the difference between the mass of intial nucleus and the masses of nuclei produced by fission this difference of mass converted into energy according to the Einstein's mass energy relation $E = mc^2$ where m is the mass converted into energy and c is the velocity of light. consider the fission of uranium ($z = 92$) into barium ($z = 56$) and krypton ($z = 36$) by slow neutrons

$$_{92}^{235}U + {}_0n^1 \rightarrow {}_{92}^{236}U \rightarrow {}_{56}^{141}Ba + {}_{36}^{92}Kr + 3\,{}_0n^1 + Q$$

Let us estimate the actual masses before and after the fission reaction.

Actual mass before the fission reaction

Mas

THERMO - NUCLEAR REACTIONS OR NUCLEAR FUSION

Nuclear reactions which take place at very high temperature are called thermonuclear reactions. Nuclear fusion is the process in which two lighter nuclei are combined or fused together to form a heavier and stable nucleus. in this case a large amount of

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Department of Physics

Additional Input	B.Prathibha(IIIMPCs)	Department of physics

7/11/2014 B. Prathibha IIIrd BSc (MPCs) Assignment-I

ENERGY RELEASED IN NUCLEAR FISSION

A heavy nucleus undergoes a fission process, a large amount of energy is released together with the emission of neutrons which further produce fission. This energy is known as nuclear energy or atomic energy.

The amount of energy released in nuclear fission may be obtained by the method known as mass defect method i.e., the difference b/w the mass of initial nucleus and the masses of nuclei produced by fission. This difference of mass converted into energy according to the Einstein's mass energy relation $E = mc^2$ where m is the mass converted into energy according to the mass converted into energy and c is the velocity of light. For example, consider the fission of uranium $^{235}_{92}(z=92)$ into barium $^{141}_{56}(z=56)$ and krypton $^{92}_{36}(z=36)$ by slow neutrons. The reaction is given by

$$_{92}U^{235} + {}_{0}n^{1} \rightarrow {}_{92}U^{236} \rightarrow {}_{56}Ba^{141} + {}_{36}Kr^{92} + 3n^{1} + Q$$

Let us estimate the actual masses before and after the fission reaction.

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Department of Physics

Additional Input	K.Manjula(IIIMPCs)	Department of physics

17-11-2019

Physics Assignment

K. Manjula
III B.Sc No:-21

NEUTRINO HYPOTHESIS OF B-DECAY :-

In order to explain the difficulties with B-ray spectra pauli in 1930 forwarded a new hypothesis known as neutrono hypothesis. According to this hypothesis, in the process of B-decay, a neutral particle which has a negligible mass as compared to electron charge zero and spin half is emitted along with B- particles. this particle carries a part of available energy and momentum and is called neutrino. Neutrino travels with the velocity of light. in fact, in some respect, it resembles with photon. on the basis of neutrino theory, the conservation of linear and angular momentia in B-decay may be explained.

we know that an atomic nucleus contains positively charged protons and uncharged neutrons. during B- decay B- particles (electrons) are created just at the time of emission by the conversion of neutron into a proton. when a neutron is converted into proton an electron & neutrino are emitted.

Neutron → proton + electron + neutrino

$$_0n^1 \rightarrow {}_1H^1 + {}_{-0}1e^0 + \nu$$

Mass $1 \rightarrow 1 + 0 + 0$

charge $0 \rightarrow +1 + -1 + 0$

So both the mass and charge are conserved.

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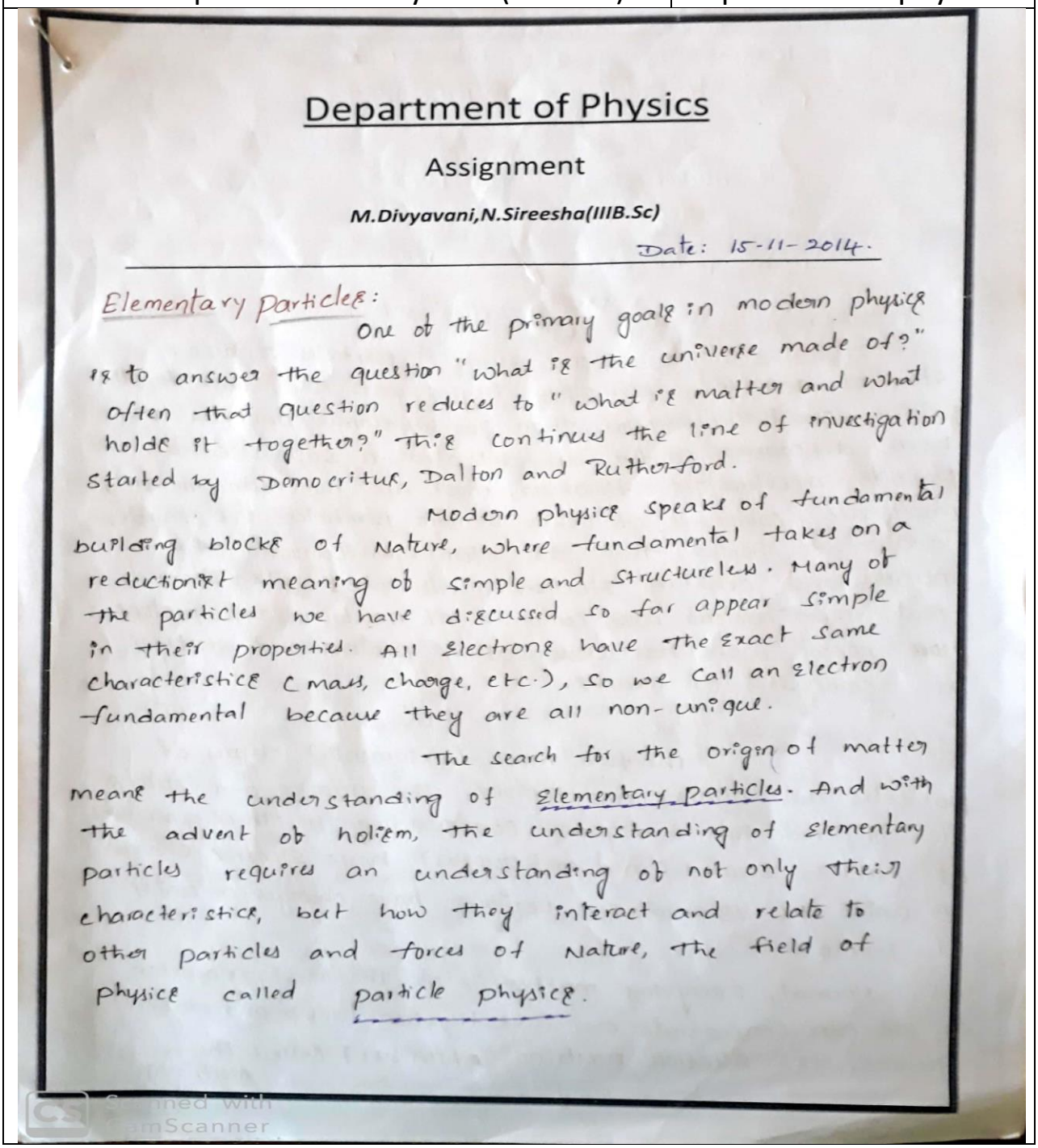
Department of Physics

Additional Input	M.Divyavani(IIIMPCs)	Department of physics



Department of Physics

Assignment

M.Divyavani, N.Sireesha(IIIB.Sc)

Date: 15-11-2014.

Elementary Particles:

One of the primary goals in modern physics is to answer the question "what is the universe made of?" often that question reduces to "what is matter and what holds it together?" This continues the line of investigation started by Democritus, Dalton and Rutherford.

Modern physics speaks of fundamental building blocks of Nature, where fundamental takes on a reductionist meaning of simple and structureless. Many of the particles we have discussed so far appear simple in their properties. All electrons have the exact same characteristics (mass, charge, etc.), so we call an electron fundamental because they are all non-unique.

The search for the origin of matter means the understanding of Elementary particles. And with the advent of holism, the understanding of elementary particles requires an understanding of not only their characteristics, but how they interact and relate to other particles and forces of Nature, the field of physics called particle physics.

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Department of Physics

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K. Sruthi

III B.Sc

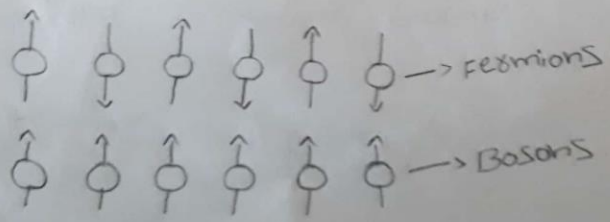
Date: 15-11-2014.

Assignment

ELEMENTARY PARTICLES

A Fermion name coined by paul Dirac from the surname of Enrico Fermi is any part characterized by Fermi-Dirac Statistics and obeying the pauli-exclusion principle. Fermions differ from bosons which obey Bose-Einstein Statistics.

In particle physics, an elementary particle or fundamental particle is a particle who substructure is unknown, thus it is unknown whether it is composed of other particles. Elementary particle include the fundamental fermions like quarks, leptons, antiquarks & antileptons). which generally are " matter particles & anti matter particles. as well as the fundamental bosons like gauge bosons & Higgs boson which generally are force particles that mediate interactions among fermions. A Particle Containing two or more elementary particles is a Composite particle.



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