K.S.N GOVT. DEGREE COLLEGE FOR WOMEN

An ISO Certified & Autonomous Institution

Affiliated to Sri Krishnadevaraya University - Ananthapuramu - A.P - 515002

NAAC A Grade (3.15/4.00) 3rd Cycle

DEPARTMENT OF ELECTRONICS

MINUTES OF BOARD OF STUDIES MEETING

(As per the new regulations of APSCHE w.e.f. 2023-2024)

Date: 10th October, 2023

B.Sc Electronics Minor: Semester II

Curriculum and Question Paper Pattern

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AGENDA:

- To review the curriculum as prescribed by APSCHE with effect from Academic Year 2023-24
- To discuss whether changes are required in the curriculum
- To discuss and propose the criteria and pattern of internal assessment
- To discuss and propose the pattern of external assessment
- To offer value added Add On and Certificate Courses
- Any other subject with the permission of the Chairperson

Constitution of the Board of Studies in Electronics

Sl. No	Name& Designation	Acted as	Signatures
1	Sri V. Thimma Reddy Lecturer in Physics and HOD In Electronics	Chair Person	
2.	Dr. P.Thimmaiah Department of Electronics SK University, Anantapuramu	University Nominee	10/10/2023
3.	Dr. G. Mahaboob Basha Lecturer in Physics KVR GDC(A) Kurnool	Subject Expert	10/10/23
4.	Dr. M.D.Waaiz Lecturer in Physics Silver Jubilee Govt College Kurnool	Subject Expert	10-10-2023
5.	Smt. B. Shiny Snehalatha Guest Faculty in Electronics	Member	
6.	Kum P. Divya Guest Faculty in Electronics	Member	
7.	Sri P. Naveen Kumar Digi Brains Academy Anantapuramu	Industrialist	
8.	P.Likhitha	Alumni	P. Likhitha

KSN GOVERNMENT DEGREE COLLEGE FOR WOMEN (A) ANANTAPUR

Board of Studies Meeting 2023-24

Department of Electronics

The members of BoS in Electronics met on 10-10-2023 in the Department of Electronics, KSN GDC for Women (A), under the chairmanship of Sri V. Thimma Reddy, Chairperson of the BoS of Electronics Department and discussed the proposals on the curriculum and examination pattern for the B.Sc, Minor Electronics II Semester. The following proposals are submitted as a part of the agenda for the consideration and approval by the honorable members of Board of Studies.

1. It is Resolved and approved the syllabus and Practical Experiment for B.Sc II Semester Electronics Minor along with the model paper proposed by the Department.

2. It is Resolved and approved the syllabus and model paper for the Certificate Course titled **Electrical Appliances** and **PCB Techniques**

3. It is Resolved and approved the question paper pattern for B.Sc Electronics Paper Minor in Semesters II, . It is approved that the external examination shall be for 60 Marks (Pass marks: 25), and weightage for the internal assessment is 40 marks (Pass Marks: 15).

4. It is Resolved and approved the External Practical examination shall be for 50 Marks(Pass Marks 20).

5. It is Resolved and approved the decision to conduct as many student activities centric as possible.

6. It is Resolved and approved the list of Experiments - Annexure III.

7. It is Resolved and approved the panel members, paper setters and practical examiners.

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KSN GOVERNMENT COLLEGE FOR WOMEN(A)ANANTAPUR

Proposed changes in Curriculum 2023-24

SEMESTER – II

COURSE 1: FUNDAMENTALS OF ELECTRICITY AND ELECTRONICS

S.N	Unit	Topics to be deleted	Topics to be added	Justification/Remarks
1	Unit I: Electrostatics	No Change	No Change	NA
2.	Unit II: Capacitors	No Change	No Change	Nil
3.	Unit III Electrical Measurements	Entire Chapter	**Network Theorems:** Kirchoff's Laws, Mesh analysis, Loop analysis, Node analysis. Thevenin's and Norton's, Superposition theorems, Maximum power transfer theorem and Miliman's Theorems,Simple problems for network	The Topics are related to Physics and are repeating in this paper. Hence the entire unit is replaced by new topics with modification of 15-20%
4	Unit IV: Diode Circuits and Power Supplies	Nil	Load Regulation, Line Regulation Definitions	Zener Diode Applications

5	Unit V Transistor Circuits	Nil	Boolean Algebra, De-Morgan's Theorems, - Universal building blocks using NAND and NOR Gates. Construction of basic logic gates using diodes. Combinational Circuits: Half Adder and Full Adder.	Basics of Digital Electronics topics are added

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ALLOCATION OF CREDITS TO COURSES OFFERED
KSN GOVERNMENT DEGREE COLLEGE FOR WOMEN (A)
ANANTHAPURAMU
DEPARTMENT OF ELECTRONICS

.No	Semester	Course	Title of the Course	Hours/week	Credits	IA	EA	Total
B.Sc ELECTRONICS MINOR								
1	II	1	Fundamental of Electricity and Electronics	3	3	40	60	100
2	II	1	Fundamental of Electricity and Electronics Practical Course	2	1	-	50	50
Total Marks								150

KSN GOVERNMENT DEGREE COLLEGE FOR WOMEN (A)
ANANTHAPURAMU
DEPARTMENT OF ELECTRONICS -2023-2024
Course Objectives and Outcomes

Sl.no	Course	Title of the Course	Semester	Objectives & Outcomes
B.Sc ELECTRONICS MINOR				
1	1	Fundamental of Electricity and Electronics	II	**The students will learn:** • Basics of electrostatics, Gauss theorem and its applications, concept of a capacitor, various types of capacitors and dielectric constant, magnetic effects of current, cells and the measuring instruments like ammeter and voltmeter, • 2) Basics of p-n junction, rectifying action of a diode, regulated power supplies and wave shaping circuits, and • 3) Transistor and its three modes of operation, h-parameter model of a transistor and the frequency response of an amplifier

ANNEXURE –I

Recommended Question Paper Patterns and Models

K.S.N Government Degree College for Women (A)

QUESTION PAPER PATTERN FOR SEM II (Minors)

Time: 3 Hrs

Max.Marks:60

PART-A

Answer any Five questions. Each question carries 4marks. 5X4 = 20M.

1. From UNIT-I
2. From UNIT-II
3. From UNIT-III
4. From UNIT-IV
5. From UNIT-V
6. From UNIT-I to V
7. From UNIT-I to V
8. From UNIT-I to V

(Two questions from each Unit I ,II, III and One from each unit IV &V)

PART-B

Answer ALL questions. Each question carries 8 Marks. 5X8 = 40M

9. (a)

(Or)

(b)

10. (a)

(Or)

(b)

11. (a)

(or)

(b)

12. (a)

(or)

(b)

13. (a)

(or)

(b)

(Set ONE question from each Unit-I, II, III, IV, V with internal choice)

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ANNEXURE - II

INTERNAL ASSESSMENT EXAM PATTERN (CIA)

1. There will be two internal assessment examinations of 20 and 15 marks each.
2. **The Internal assessment in order to ensure the description of the abilities and other qualities a course seeks to develop will be tested in form of CIA.**

S.No	Type of Assessment	Weightage Assigned
1	Assignments	5
2	Project-Work/Seminar/Group Discussion,/Role play /Quizzes/Presentations	5
3	Cleaning, Greening and Attendance	5
4	Testing ol knowledge though Mid-term examinations (Mid -1 + Mid -2)	20+15
	Total	50

The marks Obtained by a Student for 50 Marks total of (Two Mid Exams for 35, Assignments 5, Class Room Activates 5, Clean & Green and Attendence5) shall be Scale down to 40 Marks

MIDTERM EXAMINATION – I : QUESTION PAPER FORMAT

The question paper consists of THREE sections. Total=20 Marks

Section-A

Long answer questions

Answer any one of the following questions. 1×5=5M

1.
2.
3.

Section-B

Short answer questions

Answer any five of the following questions. 2 × 5 = 10M

1.
2.
3.
4.
5.
6.
7.
8.

Section-C

Answer the following objective questions. $10 \times \frac{1}{2} = 5$ M

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

MIDTERM EXAMINATION – II : QUESTION PAPER FORMAT

The question paper consists of TWO sections. Total=15 Marks

Section-A

Long answer questions

Answer any one of the following questions. 1×5=5M

1.
2.
3.

Section-B

Short answer questions

Answer any five of the following questions. 2 × 5 = 10M

1.
2.
3.
4.
5.
6.
7.
8.

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ANNEXURE – III

K.S.N Government Degree College for Women (A)

SEMESTER-I COURSE 1: FUNDAMENTALS OF ELECTRICITY AND ELECTRONICS

Theory Credits: 3 3hrs/w

Objectives

The students will learn:

1) Basics of electrostatics, Gauss theorem and its applications, concept of a capacitor, various types of capacitors and dielectric constant, magnetic effects of current, cells and the measuring instruments like ammeter andvoltmeter,
2) Basics of p-n junction, rectifying action of a diode, regulated power supplies andwave shapingcircuits, and
3) Transistor and its three modes of operation, h-parameter model of a transistor andthe frequency response of an amplifier. T

UNIT-I

Electrostatics: Electric charges - Coulomb's law - Electric field - Electric intensity and electric potential - Relation between electric potential and intensity - Electric intensity and potential due to a uniform charged conducting sphere at a point outside, on, andinside the conductor.

Electric dipole - Dipole moment - Intensity and potential due to a dipole - Statementand proof ofGauss law - Application of Gauss law to uniformly charged solid sphere.

UNIT-II

Capacitors: Definition and unit of capacity - Capacitance of a parallel plate capacitor - Effect of dielectric on capacity - Capacitors in series and parallel - Energy stored in acharged capacitors - Loss of energy on sharing of charges between two capacitors - Force of attraction between platesof charged parallel plate capacitor - Kelvin's attracted disc electrometer - Measurement of potential and dielectric constant.

Type of capacitors - Mica capacitor, Electrolytic capacitors, Variable air capacitor - Uses ofcapacitors.

UNIT-III

Electrical Measurements: Carey-Foster bridge - Determination of specific resistance - Potentiometer - Calibration of low and high range voltmeters - Calibration of Low rangeammeter.

Magnetic Effect of Current: Biot-Savart's law [Force on a conductor carrying currentplaced in amagnetic field - Principle, construction and theory of a moving coil ballistic galvanometer - Measurement of figure of merit of B.G. - Comparison of capacitors using B.G.

UNIT-IV

Diode circuits and power Supplies: Junction diode characteristics - Half and full wave rectifiers - Expression for efficiency and ripple factor - Construction of low range power peak using diodes -Bridge rectifier - Filter circuits - Zener Diode - Characteristics - Regulated power supply using Zener diode - Clipper and Clamper using diodes. Differentiator and integrator using resistor and capacitor.

UNIT-V

Transistor circuits: Characteristics of a transistor in CB, CE modes - Relatively merits Graphical analysis in CE configuration - Transistor as a amplifier - RC coupled

Single stage amplifier - Frequency response - Thevenin's and Norton's theorems - h parameters.

Basis logic gates AND, OR, and NOT - Construction of basic logic gates using diodes andtransistors.

Text Books

Electricity and Magnetism - *M. Narayanamoorthi and Others*, National PublishingCo., Chennai.Electricity and Magnetism - *R. Murugeshan*, S. Chand & Co. Ltd., New Delhi,Revised Edition, 2006.

Principles of Electronics - *V.K. Mehta*, S. Chand & Co., 4/e, 2001. Basic Electronics - *B.L. Theraja*, S. Chand & Co., 4/e, 2001.

Reference Books

Electricity and Magnetism - *Brijlal & Subrahmanyam*, Ratan Prakashan Mandir,Agra. Fundamentals of Electricity and Magnetism - *B.D. Duggal & C.L. Chhabra*, ShobanLal NaginChand & Co., Jallundur.

Physics, Vol. II - *Resnick, Halliday & Krane*, 5/e, John Wiley & Sons, Inc.,. Basic Electronics - *B. Grob*, McGraw - hill, 6/e, NY, 1989.

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ANNEXURE – IV

K.S.N Government Degree College for Women (A)

Proposed Panel of Examiners and Paper Setters

Dr.P.Thimmayya M.Sc., Ph.D., SK Univrsity,Ananthapuramu 9440855726 drptm2008@gmail.com	Dr.G.Mahabbob Basha M.Sc.,Ph.D KVR GDC(A),Kurnool 8333054072 gmbashaock@gmail.com
Dr .P.Suryanagi Reddy M.Sc., M.Phil,Ph.D., B.Ed GDC Kalyanadurg 9491155894 suryassbn@gmail.com	Dr.K.Chandrashekara Reddy M.Sc., Ph.D GDC Uravakonda 9440247699 chandrasekarreddyssbn@gmail.com
Dr.G.Venakta Chalapathi M.Sc., M.Phill.,Ph.S., GDCM(A),Atp 9440210737 gvcloyola@gmail.com	M.Bhakthavatsalam M.Sc., M.Phil., GDCM(A),Atp 7396949877 0308@gmail.com
Dr.Waaiz M.Sc., Ph.D KVR GDC., Kurnool mdwaaizphysics@gmail.com	Dr.M Sreelekha GDCM(A) Ananthapuramu
Dr.Sailaja M.Sc., Ph.D., GDCM(A) Ananthapuramu	Dr.D.Chandrashekar M.Tech., Ph.D M.Sc., Ph.D., GDCM(A) Ananthapuramu

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K.S.N Government Degree College for Women (A)

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Theory **Credits: 3** **3hrs/w**

Objectives

The students will learn:

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2) Basics of p-n junction, rectifying action of a diode, regulated power supplies and wave shapingcircuits, and
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Type of capacitors - Mica capacitor, Electrolytic capacitors, Variable air capacitor - Uses of capacitors.

UNIT-III

Kirchhoff's Laws, Mesh analysis, Loop analysis, Node analysis. **Network Theorems:** Thevenin's Theorem, Norton's Theorem, Superposition theorem, Maximum power transfer Theorem and Miliman's Theorem, Simple Network problems.

UNIT-IV

Diode circuits and power Supplies: Junction diode characteristics - Half and full wave rectifiers - Expression for efficiency and ripple factor - Construction of low range power peak using diodes -Bridge rectifier - Filter circuits - Zener Diode Characteristics - Load regulation and Line regulation and definition - Regulated power supply usingZener diode - Clipper and Clamper using diodes.

Differentiator and integrator using resistor and capacitor.

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K.S.N Government Degree College for Women (A)

SEMESTER-IICOURSE 1: FUNDAMENTALS OF ELECTRICITY AND ELECTRONICS

Practicals

Practicals **Credits: 1** **2hrs/w**

Sl.No	List of Practical Experiments
1	Familiarization of Multi-meter
2	Thevenin's and Norton's Theorems
3	Maximum Power Transfer Theorem
4	V-I Characteristics of P-N Junction Diode
5	V-I Characteristics of Zener Diode
6	CE of BJT
7	Low pass and High pass Using RC/LR
8	Basic Logic gates
9	Universal Logic gates
10	Half adder and Full Adder