

**INDIRA TECHNICAL INSTITUTE EDUCATION SOCIETY
NASHIK**

**DIPLOMA IN ELECTRONIC ENGINEERING SERVICES
(DEES - ER)**

THEORY PAPER I :	Syllabus for this paper is same as Certificate Course in AUDIO RADIO SERVICING [ARS] Refer this syllabus booklet Page No. _____	100 Marks
THEORY PAPER II :	Syllabus for this paper is printed below Refer this syllabus booklet Page No. _____	100 Marks
PRACTICAL I & II :	Two Separate Practical Each practical Scheme is same as per respective certificate course Practical 100 Marks each – Total 200 Marks.	200 Marks
		Total : (400 marks)



(DEES (ER) - PAPER - II)

[DEES (ER) - II / DETES - II]

THEORY SYLLABUS

1) POWER SUPPLY: -

- a) Series and shunt regulated power supply.
- b) Over voltage and short circuit protection circuits using transistors.
- c) Regulated power supply using LM 723.
- d) Switch Mode Power Supply SMPS.
- e) Introduction to Inverter, UPS, Battery backup.

2) DIGITAL ELECTRONICS: -

- a) Comparisons between analogue and digital electronics.
- b) Different number Systems, Decimal, Binary, Hexadecimal.
- c) Conversion of one No. system to another No. system.
- d) One's / Two's compliment No. Addition & subtraction of two Binary No.
- e) Study of different codes: - BCD, ASCII.
- f) Concept of Dynamic logic & D.C. logic.
- g) Logic probe.

3) STUDY OF LOGICAL GATES: -

- a) NOT, OR, NOR, AND, NAND, EX-OR, EX-NOR, Symbol, diagram & Truth TABLE.
- b) Boolean Algebra.
- c) Application's of diff. gates.
- d) DEMORGAN's LAW.

4) FLIP-FLOP: -

- a) S.R. flip-flop, D flip-flop, SR-T flip-flop, J.K. flip-flop, Master and Slave JK flip-flop, Symbol, Truth table & diagram using gate circuit
- b) Timer IC 555, Monostable & Astable multi vibrator using IC 555, Schmitt Trigger.
- c) Half /Full Adder & Subtractor.

5) COUNTER, REGISTERS: -

- a) Binary counter, BCD counter, Mod-n counter, up & down counter, Synchronous counter, Ring counter.
- b) Encoder, Decoder, Multiplexer, De-multiplexer, A/D Converter & D/A Converter

6) OPTO ELECTRONICS, ELECTRONIC DEVICES & ELECTROMECHANICAL DEVICES: -

- a) Principal of Opto electronics, Classification of Optical devices as sensors, emitters etc. (Photo diode, Photo transistor, LASCR, LASCs, LDR)
- b) Opto coupler introduction to Fiber optics.
- c) Construction, symbol and characteristics of UJT, DIAC, SCR , TRIAC, FET, JFET, & MOSFET Commercial application of above electronics devices.
- d) Introduction to Transducer. Study different types of Transducer. Various application of it.
- e) Introduction of various Automatic switches, SUCH AS SOLENOIDS, relays, Micro switches, Thumb switches.
- f) Types of Motors such as DC motor, AC motor and stepper motor.

7) STUDY INDUSTRIAL APPLICATION (SIMPLE CIRCUIT): -

To study the various Industrial Application which is used for security/safety purpose , such as Fire alarm, Water level indicator, Token No. Indicator, Audio level Indicator, Temperature control, Running light, Light / Sound sensitive switch, LDR Street Light, Emergency Tube light, Battery charger & Timer circuit, etc.

GUIDELINES FOR QUESTION PAPER SETTERS (DEES (ER) – II / DETES –II)

There will be total 6 Compulsory questions. Q 1 is objective question and asks on full syllabus.

		Marks
Q No.1 A)	Fill in the blanks.	(05)
B)	Match the following.	(05)
C)	Write short answer.(answers should not be more than 2 lines)	(10)
Q.No.2	Topic 2.	(16)
Q.No.3	Topic 1 & 3.	(16)
Q.No.4	Topic 4 & 5.	(16)
Q.No.5	Topic 6.	(16)
No Question ask to draw circuit diagram but faults can be ask on given circuit diagram		
Q.No.6	Topic 7.	(16)

PRACTICAL EXAMINATION I FOR : - DEES (ER) – I / DETES – I

Each candidate will have to locate three faults out of which one must be in audio equipments & two faults from radio receiver. Each fault will give 08 marks to locate fault and draw the circuits. 12 marks for write up. The write up indicate the logical method of located faults.

Journal / Term work	20 Marks.
(Journal should contain minimum 50 recommended experiments)	
Oral examination	20 Marks.

PRACTICAL EXAMINATION II FOR : - DEES (ER) – II / DETES – II

Each candidate will have to perform three practical. Ex. No. 1 & 2 - on Topic No. 2, 3 & 4. Ex. No. 3 - on Topic No 5 & 6. Each practical will give 08 marks for diagram and 12 marks for writing procedure.

Journal / Term work	20 Marks.
(Journal should contain minimum 30 recommended experiments)	
Oral examination	20 Marks.

RECOMMENDED BOOKS FOR REFERENCE

Digital electronics practical devices.	Jain & Anand.
Digital principles and application	Malvino & Leach.
Electronic device & applications	G. K. Mithal
Electronic device & applications	Motor Shed
Electronic Project Book	
Electronics For you	
101 Electronics Projects	
IC 555 Projects.	
Simple Projects.	

