

VOCATIONAL PRACTICALS QUESTION BANK

(With Effect from the Academic year 2024-25)

ELECTRONICS & COMMUNICATION TECHNICIAN (COURSE CODE: 333)



State Institute of Vocational Education

**O/o the Directorate of Intermediate Education,
Telangana State, Hyderabad**

&

Board of Intermediate Education

Telangana State, Hyderabad.

List of Participants	
1.	Dr.M.Shyamsunder Associate Professor Department of ECE, University college of engineering, Osmania University,Hyderabad
2.	Sri. Kumbala Prakash, Junior Lecturer in E&CT Government Junior College Boys , Gajwel Siddipet dist.
3.	Sri. Md.Mateen, Junior Lecturer in E&CT Government Junior College, Chanchalguda, Hyderabad dist.

**ELECTRONICS AND COMMUNICATION TECHNICIAN
FIRST YEAR
QUESTION BANK**

PAPER I: ENGINEERING DRAWING

Time: 3hrs

NR CODE: - 333/21

Max. Marks: 50

SECTION-I

1X20=20 Marks

1. Draw the regular Pentagon Pyramid of side 50mm, height 75 mm.
2. Draw the Ellipse of major axis 80 mm and minor axis 50mm.
3. Draw the Cylinder of diameter 50mm axis 90mm.
4. Draw the Parabola with major axis 80 mm minor axis 60mm.
5. Draw the letters A to Z neatly.

SECTION-II

1X10=10 Marks

6. Draw the Circle of 30 mm diameter.
7. Draw the Rectangle of 30 mm x 50 mm sides diameter.
8. Draw the equilateral triangle of side 40 mm.
9. Draw the square of side 40 mm.
10. Draw the regular Octagon of side 25mm.

1X10=10 Marks

SECTION-III

- 11 Draw the right-angle triangle sides 30mm, 40mm.
12. Draw the bisection of angle 45^0 without using Protractor.
13. Bisect a given 50 mm line without using scale.
14. Draw the Hexagon of diameter 50mm.

Record 5 marks

Viva- Voice 5 Marks

**ELECTRONICS AND COMMUNICATION TECHNICIAN
FIRST YEAR**

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**MODEL QUESTION PAPER
PAPER-I ENGINEERING DRAWING**

Time: 3hrs

NR CODE: - 333/21

Max. Marks: 50

[2 ,8,12]

Note: The serial numbers of the questions mentioned above are the serial number in question bank. In practical examination the serial number of the question will be given. The examiner shall decode it with the question bank and give the questions.

**ELECTRONICS AND COMMUNICATION TECHNICIAN
FIRST YEAR**

**QUESTION BANK
PAPER II: ELECTRONIC DEVICES AND CIRCUITS LAB**

Time: 3hrs

NR CODE: - 333/22

Max. Marks: 50

SECTION-I

1X20=20 Marks

1. Draw PN Junction diode forward, reverse bias V-I Characteristics.
2. Study the transistor CB input/output V-I Characteristics.
3. Study the SCR VI Characteristics.
4. Calculate ripple factor, Voltage regulation in full wave bridge rectifier
5. Measurement of RC Phase shift Oscillator frequency.
6. Design low pass filter Circuit.
7. Verify the Ohm's Law.
8. Verification of Kirchhoff's laws
9. Study the V-I characteristics of ZENER diode under forward and reverse bias conditions.
10. To study and plot the input and output characteristics of BJT in CE configuration.

SECTION-II

1X10=10 Marks

11. Study the operation of Multimeters (analog and digital)
12. Study of Soldering Material and Soldering Iron.
13. Study of different types of Switches
14. Study of Resistors connected in series and parallel
15. Study of Power Transformer
16. Determine RLC series resonance frequency

SECTION-III

1 X10=10 Marks

17. Determine the resistance value of various resistors using color code and DMM.
18. Identification, specifications and testing of active devices, LED and Zener diode
19. Identification, specifications and testing of active devices diodes, BJTs
20. Identification, specification, testing of Relays and Bread Boards

Record

5 marks

Viva- Voice

5 Marks

**ELECTRONICS AND COMMUNICATION TECHNICIAN
FIRST YEAR**

**MODEL QUESTION PAPER
PAPER II: ELECTRONIC DEVICES AND CIRCUITS LAB**

Time: 3hrs

NR CODE: - 333/22

Max. Marks: 50

[1,7,11]

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**ELECTRONICS AND COMMUNICATION TECHNICIAN
FIRST YEAR**

QUESTION BANK

PAPER III: DIGITAL ELECTRONICS AND COMPUTER FUNDAMENTALS LAB

Time: 3hrs

NR CODE: - 333/23

Max. Marks: 50

SECTION-I

1X20=20 Marks

1. Verify the truth table using Logic Gates - I - AND, OR, NOT (Using IC's)
2. Verify the truth table using Logic Gates Full adder.
3. Study the layout of components of Mother Board in Computer.
4. Create a document using MS-word with all table ,clipart and columns.
5. Create worksheet using MS-Excel to print the result of six subjects of class .
6. Create a worksheet to represent your cricket team scores with chart
7. Create a simple Power point presentation for your college information.

SECTION-II

1X10=10 Marks

8. Verify NAND, NOR Gates with ICs truth table.
9. Verify Half Adders with Using IC Logic gates.
10. Study 4X1 MUX.
11. Verify the De-Morgan's theorems.
12. Verify Ex - OR gate with truth table.

SECTION-III

5X2=10 Marks

13. Implement the Half adder by using minimum number of NOR Gates. 12.Study of SR Flip Flop using NAND Gates with Clock pulse
14. Study of Memories used in Computers
15. Study of the LAN Networks
16. Study the working of 3 X 8 Decoder.

Record

5 marks

Viva- Voice

5 Marks

**ELECTRONICS AND COMMUNICATION TECHNICIAN
FIRST YEAR**

MODEL QUESTION PAPER

PAPER III:

DIGITAL ELECTRONICS AND COMPUTER FUNDAMENTALS LAB

Time: 3hrs

NR CODE: - 333/23

Max. Marks: 50

[3 ,10,12]

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**ELECTRONICS AND COMMUNICATION TECHNICIAN
SECOND YEAR**

QUESTION BANK

PAPER I: COMMUNICATION ENGINEERING LAB

Time: 3hrs

NR CODE :- 333/71

Max. Marks: 50

SECTION-I

1X20=20 Marks

1. Study of Servicing tools and instruments (Soldering Iron, Screw Driver Set, Tweezers, Nose Pliers, Cutter, Hammer, File, Desolder pump, Squeezer)
2. Electronic Lab safety precautions (Regarding wiring, Flooring, First Aid Treatment)
3. Study of RF Amplifier, Mixer, Local oscillator stage and voltage measurement
4. Mention typical faults in a Radio receiver and observe the effect on voltage data and performance of the Radio Receiver
5. Study of common faults and write the procedure to rectify in radio receivers

SECTION-II

1X10=10 Marks

6. Identify various wireless devices
7. Configuration wireless router with static and dynamic IP
8. Calculate the modulation index of an AM wave
9. Study of PCM
10. Rectify the faults in wireless speaker set

SECTION-III

1X10=10 Marks

11. Study of power supply stage in Radio Receiver (Full wave Bridge Rectifier with Filter)
12. Study of AM demodulation
13. Study of IC version 2-band Radio AM/FM Radio receiver
14. Rectify the faults in wireless speaker set
15. Familiarization of SMD handling tools used for soldering/Desoldering

Record : 5 marks

Viva- Voice : 5 Marks

**ELECTRONICS AND COMMUNICATION TECHNICIAN
SECOND YEAR**

**MODEL QUESTION PAPER
PAPER I: COMMUNICATION ENGINEERING LAB**

Time: 3hrs

NR CODE :- 333/71

Max. Marks: 50

[5 ,9,15]

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ELECTRONICS AND COMMUNICATION TECHNICIAN

QUESTION BANK

SECOND YEAR

PAPER II: COMPUTER HARDWARE AND NETWORKING LAB

Time: 3hrs

NR CODE :- 333/72

Max. Marks:

50

SECTION-I

1X20=20 Marks

1. Assemble a simple inverter and converter for use with emergency lamp.
2. Boot the PC through a BOOTABLE DVD of OS. Partition the disk, Format the drive. Install Windows 7 and Windows 10 from DVD Disk.
3. Install a Scanner & Installing a printer and carrying self-test., configure it and use Automatic Document Feeder (ADF), OCR.
4. Configuration of camera, mic, WLAN and Bluetooth, touchpad, finger print scanner, Tracing the control board and identifying defective components. Servicing of control board.
5. Setup of basic collaboration tool for activities like chat, application sharing, remote desktop access and control, VoIP.

SECTION-II

1X10=10 Marks

6. Construct a simple circuit using AC/DC supply, lamp, fuse and switch.
7. Test fault finding and troubleshooting techniques.
8. Practice crimping with straight and cross CAT 6 cables. Create cabling using Fiber Optic cable and connectors.
9. Configure internet connection to the PC using wireless technology and troubleshoot various connection related problems.
10. Troubleshoot wired and wireless network and Practice on firewall technologies to secure the network perimeter.

SECTION-III

1X10=10 Marks

11. Open the cabinet and identify various motherboards components, connectors, slots, ports (USB, VGA, DVI, and HDMI), cables and Connectors.)
12. Identify various Network device like: (a) Switch (Normal and Managed), (b) Router (Normal and wireless), (c) Rack, Patch Panel, i/o box, (d) Access Point etc.
13. Practice IP Addressing technique (IPv4/IPv6) and Sub netting and Super netting the network.
14. Share the internet connection (wire and wireless) in the local network and access it from other machine in LAN and Install Proxy Server and configure it.
15. Configure services like Active Directory, DNS and DHCP.

ELECTRONICS AND COMMUNICATIONS ENGINEERING
SECOND YEAR
Viva- Voice : 5 Marks

QUESTION BANK
MODEL QUESTION PAPER

PAPER III: COMPUTER HARDWARE AND NETWORKING LAB

Time: 3hrs

NR CODE: - 333/72

Max. Marks: 50

[2 ,7,11]

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**ELECTRONICS AND COMMUNICATION TECHNICIAN
SECOND YEAR**

QUESTION BANK

PAPER III: CONSUMER ELECTRONICS LAB

Time: 3hrs

NR CODE: - 333/73

Max. Marks: 50

SECTION-I

1X20=20 Marks

1. Study the panel controls of CRO
2. Study of Hospital Equipment ECG Recorders and B.P Equipment
3. Identify the various components of CCTV system
4. Assemble the Drone.
5. Study the operating control of Microwave Oven
6. Study the operating control of Washing Machine
7. Study of characteristics of LDR

SECTION-II

1X10=10 Marks

8. Configure the DVR and verify the picture quality
9. Study of characteristics of LED
10. Identification of screen damage and replacement of screen in mobile
11. Measurement of DC and AC Voltage, frequency using CRO
12. Study the common faults and write servicing procedure in TV

SECTION-III

1X10=10 Marks

13. Identify various parts of Drone
14. Study the methods of data recovery in a mobile
15. Study and use of AMSSG
16. Test the passive components using CRO.

Record : 5 marks

Viva- Voice : 5 Marks

**ELECTRONICS AND COMMUNICATION TECHNICIAN
SECOND YEAR**

MODEL QUESTION PAPER

PAPER III: CONSUMER ELECTRONICS LAB

Time: 3hrs

NR CODE: - 333/73

Max. Marks: 50

[1 ,8,14]

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