

Hall Ticket Number:

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Code No. : 15157 (G) N

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS), HYDERABAD

Accredited by NAAC with A++ Grade

B.E. V-Semester Main Examinations, Jan./Feb.-2024

Signal Engineering

Time: 3 hours

Max. Marks: 60

Note: Answer all questions from **Part-A** and any **FIVE** from **Part-B**

Part-A (10 × 2 = 20 Marks)

Q. No.	Stem of the question	M	L	CO	PO	PSO
1.	Define the following: Station section, G-marker Board.	2	1	1	1	3
2.	What is adequate distance? Mention its importance in railway signaling.	2	1	1	1	3
3.	Explain about the subsidiary signals.	2	2	1	1	3
4.	Explain the concept of Overlapping in Indian Railways	2	2	2	1	3
5.	State the principle of operation of relay.	2	1	3	1	3
6.	Mention the types of cables used in Indian Railways?	2	1	2	1	3
7.	What is FMBI, write its features.	2	1	2	1	3
8.	Expand FRBC, ACDP and DCDP.	2	1	2	1	3
9.	What is Isolation? How it can be accomplished?	2	1	1	1	3
10.	What is Mast and Pantograph in RE area?	2	1	2	1	3
Part-B (5 × 8 = 40 Marks)						
11. a)	What are the Duties of the CRS?	4	2	1	1	3
b)	Distinguish between Absolute Block system and Automatic Block System with examples.	4	4	3	2	3
12. a)	Construct a Signaling layout for 3 road station on Single line section with MACLS showing location of signals with inter signal Distances and	4	3	3	3	3
b)	Classify different stations and explain each of them with sketches.	4	4	3	2	3
13. a)	Explain the important operation of IRS Rotary type point Machine.	4	2	3	2	3
b)	Mention the classification of Relays and explain any one with its detailed diagram.	4	2	3	2	3

Contd... 2

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14. a)	Explain the functionality of single section PTJ Push Button BI.	4	2	3	2	3
b)	Draw the Block diagram of FRBC and explain the functionality of each block.	4	2	3	2	3
15. a)	Brief about Schedule of Dimensions.	4	2	1	1	3
b)	Explain the importance of 25KV AC in Indian railways and write the effects of 25KV RE on signaling.	4	2	1	1	3
16. a)	Apply the concept of axle counter in SSDAC and explain each block.	4	3	3	2	3
b)	Apply the Double line Block Instrument concept for sending train from Station 'A' to Station 'B'.	4	3	3	2	3
17.	Answer any <i>two</i> of the following:					
a)	Examine the functionality of Level crossing gates and it's working in Indian railways.	4	4	3	2	3
b)	Analyze the working of DC Track circuits and which type of track circuits are preferred in Indian railways.	4	4	2	2	3
c)	Differentiate between the traction bonds used in Indian railways and explain its uses.	4	4	2	2	3

M : Marks; L: Bloom's Taxonomy Level; CO; Course Outcome; PO: Programme Outcome

i)	Blooms Taxonomy Level - 1	20%
ii)	Blooms Taxonomy Level - 2	40%
iii)	Blooms Taxonomy Level - 3 & 4	40%
