

GANPAT UNIVERSITY
B. Tech. Semester- V (Marine Engineering)
Regular Examination November-December 2014

2MR 506 Electronics

Time: 3 Hours]

[Total Marks: 70

Instructions:

1. Attempt all questions.
2. Answers to the two sections must be written in separate answer books.
3. Figures to the right indicate full marks.
4. Assume suitable data, if necessary.

SECTION – I

- Que. – 1** (A) What is linear amplifier? Why linear amplifier is required? 2
- (B) What do you mean by series and shunt regulated power supply. 2
- (C) Define α and β . Show that $\alpha = \beta / 1 + \beta$, $\beta = \alpha / 1 - \alpha$ 3
- (D) What are the types of JFET? Draw their symbol and explain the 5
- OR**
- Que. – 1** (A) List out different type of power amplifier and Compare them based on Conduction angle, Position of Q-point, Distortion, Efficiency factors. 6
- (B) With the help of neat diagram and waveform explain Class-B complementary symmetry amplifier. 6
- Que. – 2** (A) What is Analog to Digital converter? List out its types. 2
- (B) What is damped and undamped electrical oscillation? Illustrate your answer with waveform. 4
- (C) Draw and discuss the OP-AMP as a differential amplifier. 5
- OR**
- Que. – 2** (A) Draw and explain the circuit diagram of two input TTL basic NAND 6
- (B) How OP-AMP can act as a comparator. 5
- Que. – 3** (A) What is multiplexer? Draw circuit diagram of 2 x 1 multiplexer. 3
- (B) Draw the symbol and pin diagram of 741 OP-AMP IC. 2
- (C) Write a short note on Wein bridge oscillator. 5
- (D) Draw the symbol of pnp and npn transistor? What are the different ways we can configure the transistor? 2

SECTION – II

- Que. – 4 (A) How R-2R ladder network can work as a digital to analog converter? 6
(B) Simplify the following Boolean Function. 6
$$F = xyz + xyz' + x'y + x'z$$

OR

- Que. – 4 (A) What is Flip-Flop? Draw and explain SR Flip-Flop. 6
(B) Draw the two transistor equivalent circuit of SCR and explain its working from this circuit. 6
- Que. – 5 (A) Draw and explain the block diagram of RADAR system 5
(B) Draw the diagram and waveform of timer IC-555 as an astable multivibrator and explain the operation. 6

OR

- Que. – 5 (A) Draw and explain block diagram of microprocessor. 5
(B) What is pulse modulation? Explain PWM and PPM using waveform. 6
- Que. – 6 (A) What is demodulation? 1
(B) Draw the V-I Characteristics of SCR. 2
(C) List out the advantages of modulation. 4
(D) What is modulation? Explain FM with waveform. 5

END OF PAPER