

10. (a) Explain with a neat circuit diagram and waveform, the working of 4-bit ripple counter.

Or

- (b) With a neat circuit diagram, explain the operation of binary ladder D/A converter.
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S.No. 343

17PEL01

(For the candidates admitted from 2017-2018 onwards)

M.Sc. DEGREE EXAMINATION, NOVEMBER 2017.

First Semester

Electronics and Communication

APPLIED ELECTRONICS

Time : Three hours

Maximum : 75 marks

PART A — (5 × 5 = 25 marks)

Answer ALL questions.

1. (a) Explain the working of LED.

Or

- (b) In a common base connection, current amplification factor is 0.9. If the emitter current is 1 mA, determine the value of base current.

2. (a) What is class A power amplifier? Explain its operation.

Or

- (b) With a neat diagram, explain the working of astable multivibrator.

3. (a) Explain Gray code with an example.
Or
(b) Construct AND and OR gate using only NOR gates and explain its working.

4. (a) Draw the circuit diagram for full subtractor and explain its operation.
Or
(b) Draw and explain the working of serial in-serial out shift register.

5. (a) For a 5-bit resistive divider, determine the output voltage for a digital input of 10011. Assume that 0 = 0V and 1 = +10V.
Or
(b) Explain the operation of counter type A/D converter with necessary circuit diagram.

PART B — (5 × 10 = 50 marks)

Answer ALL questions.

6. (a) With a neat sketch, explain the working of centre tap full wave rectifier. Derive an expression for efficiency.
Or
(b) Explain with a neat schematic diagram, the construction and operation of enhancement type MOSFET.

7. (a) Explain with a neat circuit diagram, the working of push-pull amplifier.

Or

- (b) Draw a Wien bridge oscillator circuit and explain its working.

8. (a) Convert decimal 170 into (i) binary (ii) octal (iii) hexadecimal and (iv) BCD.

Or

- (b) Simplify the given equation using K-map and draw the logic circuit for the simplified equation.

$$f(A, B, C, D) = \Sigma(4, 5, 6, 9, 11, 12, 13, 15).$$

9. (a) Draw a 4 × 1 multiplexer and 1 × 4 demultiplexer and explain their working.

Or

- (b) Explain the action of RS flip flop and JK flip flop.