

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION DECEMBER 2019
(Fifth Semester)
Branch- **PHYSICS**
PRINCIPLES OF DIGITAL ELECTRONICS

Time : Three Hours

Maximum : 75 Marks

SECTION-A (20 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** marks (10x2 = 20)

- 1 Define Boolean Algebra.
- 2 State Demorgan's theorem.
- 3 What is multiplexer?
- 4 Define Ascii code.
- 5 Solve the following: $(101)_2 + (110)_2$
- 6 What is 2's complement arithmetic method give example.
- 7 What are modulus counter?
- 8 What is the function of serial in serial out shift registers?
- 9 Distinguish between ROM and RAM.
- 10 What is D/A and A/D conversion.

SECTION - B (25 Marks!)

Answer **ALL** Questions

ALL Questions Carry **EQUAL** Marks (5x5 = 25)

- 11 a Explain the OR operation with truth table and circuit diagram.
OR
b State and explain Boolean laws.
- 12 a Solve the following: i) 10010_2 to Decimal ii) $DE5_{16}$ to Decimal
OR
b Explain the seven segment decoder with a suitable diagram.
- 13 a What are flip flops? Describe the working of D flip flop with a neat diagram.
OR
b State and explain Schmitt trigger.
- 14 a Explain about serial in parallel out shift registers.
OR
b Discuss about synchronous counter.
- 15 a Define PROM & EPROM and explain it with its applications.
OR
b Explain about continuous A/D conversion.

SECTION - C (30 Marks)

Answer any **THREE** Questions

ALL Questions Carry **EQUAL** Marks (3 x 10 = 30)

- 16 State and explain about sum of product method using karnaugh Map. with their truth table and examples.
- 17 Distinguish between multiplexer and demultiplexer Discuss 1 to 16 decoders with diagram.
- 18 Explain the construction and working of RS flip flop and clocked RS flip flop.
- 19 With a suitable diagram, explain the working of parallel in serial out and