

**C. ABDUL HAKEEM COLLEGE (AUTONOMOUS),  
MELVISHARAM - 632 509.  
SEMESTER EXAMINATIONS, NOVEMBER - 2018**

**B.Sc., PHYSICS  
SEMESTER V  
U15SPH501 - APPLIED ELECTRONICS (SBS – III)**

Time: Three Hours

Maximum: 60 Marks

**SECTION - A (10 X 1 = 10 Marks)**

Answer **ALL** Questions.

1. Draw the symbol of n-channel FET and p-channel FET.
2. What is holding current in an SCR?
3. Draw the pin out diagram of operational amplifier.
4. Define virtual ground with respect to op-amp.
5. What are the advantages of R-2R network over binary weighted network?
6. What is meant by resolution in the context of D/A converter?
7. Write the classification of transducers.
8. What is meant by Hall effect?
9. What are the uses of Digital multimeter?
10. Define resting potential.

**SECTION - B (5 X 4 = 20 Marks)**

Answer **ALL** Questions.

11. a) Discuss the construction and working of p-channel MOSFET.  
(Or)  
b) Draw and explain the V-I characteristics of SCR.

12. a) With a circuit diagram of op-amp as non-inverting amplifier. Obtain the expression for output voltage and output gain.  
(Or)

(Or)

13. a) Discuss the operation of adder and integrator circuits using Op-amp.  
b) Explain with the circuit, the working of astable multivibrator using IC-555.  
(Or)

(Or)

14. a) Write short notes on Magnetostrictive transducers and its applications.  
b) With a neat sketch, the working of a four-bit binary weighed D/A converter.

(Or)

15. a) Explain the working of electro-optic transducers.  
b) Discuss the different sources of bio-electric potentials.  
(Or)

(Or)

- b) How will you measure the body temperature using transducers? Explain.

**SECTION - C (3 X 10 = 30 Marks)**

Answer **ANY THREE** Questions.

16. Describe the operation of SCR as full wave rectifier.
17. Explain the working of the astable multivibrator using op-amp with help of a neat diagram.
18. Discuss with necessary block diagram, the working of parallel A/D converter.
19. Discuss the different types and components of bio-sensors and mention their features.
20. Draw the block diagram of digital multimeter and explain in detail.  
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