**SS2 SCHEME OF WORK BASIC ELECTRONICS**

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| WEEK | TOPICS | CONTENTS |  |
| 1 | HAND TOOLS | * Explain the meaning of hand tools. * State types and uses of hand tools |  |
| 2 | MEASURING INSTRUMENT | * Explain the meaning of measuring instrument. * Differentiate between analogue and digital measuring instruments. * State different types of measuring instrument and their respective uses. |  |
| 3-4 | ELECTRON EMISSION | * Distinguish among the four different types of electron emission. * State the application of the four types of electron emission. |  |
| 5 | POWER IN AC CIRCUITES | * Explain power and power triangle. * Explain power factor and power factor correction * State advantages and disadvantages of power factor correction. * Calculate power factor in a given AC circuit. * Explain Q-factor and bandwidth. |  |
| 6 | SEMICONDUCTORS DIODES | * Explain the concept of diodes * Differentiate between the types of diodes. * State the operational principles of Semiconductor diodes * State the rating of diode * State the applications of the different types of diodes. * Construct simple circuits using semiconductor diodes. |  |
| 7-8 | TRANSISTORS | * Explain the concept of a transistor * Explain biasing of a transistor. * Explain bipolar transistor circuits * Explain types of transistors and symbols * Explain applications of transistors. |  |
| 9-1 | LOGIC GATE | * Explain logic gates. * State different logic gates, OR, NOR,AND and NAND. * Construct the TRUTH table for each of the above mentioned gates |  |
| 2-3 | INTERGRATED CIRCUITS | * Explain the concept of integrated Circuit(IC). * State the advantages and disadvantages of IC. * State the applications of IC. * Explain the concept of microprocessor. * Explain the following terms as related to microprocessor: RAM, ROM and EPROM. * Mention applications of microprocessor. |  |
| 4-5 | POWER SUPPLY | * Explain rectification * Explain the differences between half wave and full wave rectification. * Explain how a.c is converted to d.c. by the use of rectifiers. * State the meaning of voltage regulators * Explain the operation of voltage regulators |  |
| 6-7 | RADIO TRANSMISSION AND RECEPTION | * Describe the principle of radio transmission and reception (AM and FM). * Explain each stage of a radio receiver (AM and FM). * State the relative advantage of FM over AM. * Demonstrate how to detect faults in radio receiver. |  |
| 8-9 | TELEVISION RECEIVERS | * Explain stages of a Television receiver using block diagram. |  |
| 1-2 | TRANSDUCERS AND SENSORS | * Explain the meaning of the following: i. transducer ii. sensor * Discuss the principles of operation of a transducer. * Explain the principles of operation of a sensor. * State types of transducers and sensors. * Explain the uses of transducers and sensors |  |
| 3-4 | ACOUSTIC TRANSDUCRES | * Explain types of acoustic transducers. * State the applications of acoustic transducers |  |
| 5-6 | AMPLIFIER | * Define amplifier * List the classes of amplifier. * State the applications of amplifier |  |
| 7-8 | FEEDBACK CIRCUITS | * Explain the principles of feedback circuits * List the types of feedback amplifier * Explain the principles of oscillator. * List types of oscillator * State the application of oscillator. |  |