GOVERNMENT POLYTECHNIC ,NAYAGARH

Department Of Electrical Engineering

Semester: 6TH DIPLOMA | Session: 2021-22

Subject: Electrical Installation and Estimating | No Of Period :60 (4p/week)

Branch: Electrical Engineering | Name of Faculty: Satyabrata Sahoo

Week	Period	Topics to be covered
1st Week	1	Definitions, Ampere, Apparatus, Accessible, Bare, cable, circuit, circuit breaker, conductor voltage (low, medium, high, EH)
	2	live, dead, cut-out, conduit, system, danger, Installation, earthing system, span, volt, switch gear, etc
	3	General safety precautions, rule 29, 30, 31, 32, 33, 34, 35, 36, 40, 41, 43, 44, 45, 46
	4	General conditions relating to supply and use of energy : rule 47, 48, 49, 50, 51,54, 55, 56, 57
2nd Week	5	General conditions relating to supply and use of energy: 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 70.
	6	OH lines : Rule 74, 75, 76, 77, 78, 79, 80, 86, 87, 88, 89, 90, 91
	7	Electrical installations, domestics, industrial, Wiring System, Internal distribution of Electrical Energy.
	8	Methods of wiring, systems of wiring, wire and cable, conductor materials used in cables, insulating materials mechanical protection
3rd Week	9	Types of cables used in internal wiring, multi-stranded cables, voltage grinding of cables, general specifications of cables.
	10	Main switch and distribution boards, conduits, conduit accessories and fittings, lighting accessories and fittings, fuses
	11	important definitions, determination of size of fuse – wire, fuse units
	12	Earthing conductor, earthing, IS specifications regarding earthing of electrical installations, points to be earthed
4th Week	13	Determination of size of earth wire and earth plate for domestic and industrial installations. Material required for GI pipe earthing.
	14	Aspects of good lighting services. Types of lighting schemes, design of lighting schemes
	15	factory lighting, public lighting installations, street lighting,
	16	General rules for wiring, determination of number of points
5th Week	17	Determination of total load, determination of Number of subcircuits
	18	Type of internal wiring, cleat wiring, CTS wiring, their advantage and disadvantages comparison and applications.
	29	wooden casing capping, metal sheathed wiring, conduit wiring, their advantage and disadvantages comparison and applications.
	20	Prepare one estimate of materials required for CTS wiring for small domestic installation
6th Week	21	-do-
	22	Prepare one estimate of materials required for conduit wiring for small domestic installation
	23	-do-
	24	Prepare one estimate of materials required for concealed wiring for domestic installation
7th Week	25	-do-

	26	Prepare one estimate of materials required for concealed wiring for domestic installation
	27	-do-
	28	Prepare one estimate of materials required for erection of conduct wiring to a small workshop installation
8th Week	29	-do-
	30	Main components of overhead lines, line supports, factors Governing Height of pole
	31	conductor materials, determination of size of conductor for overhead transmission line
	32	cross arms, pole brackets and clamps, guys and stays, conductors configurations, spacing and clearances, span lengths
9th Week	33	overhead line insulators, types of insulators, lighting arresters, danger plates, anti-climbing devices,
	34	bird guards, beads of jumpers, jumpers, tee-offs, guarding of overhead lines
	35	Prepare an estimate of materials required for LT distribution line within load of 100 KW maximum and standard spans involving calculation of the size of conductor
	36	-do-
10th Week	37	Prepare an estimate of materials required for LT distribution line within load of 100 KW maximum and standard spans involving calculation of the size of conductor
	38	-do-
	39	Prepare an estimate of materials required for LT distribution line within load of 100 KW maximum and standard spans involving calculation of the size of conductor
	40	-do-
11th Week	41	Prepare an estimate of materials required for HT distribution line (11 KV) within 2 km and load of 2000 KVA maximum and standard spans involving calculation of the size of conductor
	42	-do-
	43	Components of service lines, service line (cables and conductors)
	44	bearer wire, lacing rod. Ariel fuse, service support, energy box and meters etc
12th Week	45	Prepare and estimate for providing single phase supply of load of 5 KW (light, fan, socket) to a single stored residential building
	46	-do-
	47	Prepare and estimate for providing single phase supply load of 3KW to each floor of a double stored building having separate energy meter.
	48	-do-
13th Week	49	Prepare one estimate of materials required for service connection to a factory building with load within 15 KW using insulated wire
	50	-do-
	51	Prepare one estimate of materials required for service connection to a factory building with load within 15 KW using bare conductor and insulated wire combined

	52	-do-
14th Week	53	Prepare one materials estimate for Pole mounted substation
	54	-do-
	55	Prepare one materials estimate for Plinth Mounted substation.
	56	-do-
15th Week	57	Previous Question Discussion
	58	Previous Question Discussion.
	59	Previous Question Discussion
	60	Previous Question Discussion

Signature of Faculty

Signature of HOD