Practical plain tap joint. application: this is used

PRACTICAL GUIDE FOR ELECTRICAL WORKSHOP PRACTICE II(EEC 129) COMPILEDBYODUBONAISMAIL ELECTRICALELECTRONICS DEPARTMENTYABACOLLEGE OF TECHNOLOGY CONTENTSWORKSHOP PRACTICE 01: CABLE JOINTSWORKSHOP PRACTICE 02: WIRING TECHNIQUES WORKSHOP PRACTICE 03: POWER DISTRIBUTIONWORKSHOP PRACTICE 04: TESTING OF ELECTRICAL INSTALLATION WORKSHOP PRACTICE 05: ELECTRICAL SOLDERINGWORKSHOP PRACTICE 06: ELECTRIC MOTOR INSTALLATION WORKSHOP PRACTICE 01: TITLE: CABLE JOINTS Aims: At the end of the exercise students should be able to understand differentmethods of joining electrical cables and their applications Materials8mm2 service cableToolsCutting plierScraping knifeNose plier Type11: Y-splice jointApplication: Thismethod of wrapping is generally used on small cables because the strands areflexible and all can be wrapped in one operation Diagram Step 1: Step 2: Type 2: Knottedtap. Application: Thisis used where the tap wire is under heavy tensile stress. Diagram Step 1 Type 3: Plaintap joint. Application: Thisis used where the tap wire is under considerable tensile stress circuit.

Diagram Step1 Type4: Duplex cross joint. Application: Thisis a two-tap wire turned simultaneously and is used where the two tap wire isunder heavy tensile stress Diagram Step 1 Type 5: WesternUnion Short-tie Splice. Application: This is the mostwidely used splice or joint in interior wiring installation to extend the lengthof wire from one point to another. Diagram Step1 Type6: Cross joint.

Application: Thesame application is done as in plain tap and the only difference is that thistap is a combination of two plain taps place side by side

with each other. Diagram Step1: WORKSHOP PRACTICE 02; WIRING TECHNIQUESAim: At the end of the exercise, students should beable to: 1. Install a Single light point controlled by a one-way switch 2.

Install Two light points controlled by a one-way switch 3. Install Two light points controlled separately by two one-wayswitches4. Install a ring circuit5. Install an Earth Leakage Circuit Breaker(ELCB.) 1. Materials/Items 1.

5A 1-gang, 1-way switch EarthLeakage Circuit Breaker13ASwitch socket outlet x4 (pattress) Ceilingrose x 4Jointbox x 5 ¾screws 5 packets Bulkedclips 20 packets 13Aplugs x 5 Cables1. 5 mm2 x 2 PVC , 2. 5mm2x 3 PVC, 0.

5mm2 x 2 (flexible cord) 2. 3 Diagrams (i) Singlelight point controlled by a one-way switch N L S LAMP (ii) Twolight points controlled by a one-way switch N L S LAMP 1 LAMP 2 (iii) Twolight points controlled separately by two one-way switches N L LAMP 1 LAMP 2 S1 S2 2. 4 Description/Operation2. 5 Precaution2. 6 Conclusion EXPERIMENT 03: 3. 0 Title: power Distribution3. 1 Aim: Atthe end of the exercise, students should be able to distribute power in a consumerpremises employing; 1. Single phase 2.

Three-phase four-wire systems. 3. 2 Material/Itemsi. ConsumerControl Unit: I-Phase3-Phaseii. 1.

5mm2 x 2 co res PVCiii. 2. 5mm2x 3 cores PVCiv 4. 0mm2x 3 cores PVCv. 6.

0mm2 x 3 cores PVC 3. 3 Descriptions/Diagram (attached)3. 4 Precaution3. 5 Conclusion EXPERIMENT 04: 4. 0 Title: Testing of ElectricalInstallation 4.

1 Aim: At the end of the exercise, students should be ableto carry out:

1. Verification of polarity; 2. Insulation test;

3. Earthing test 4.

Test of Ring Circuit Continuity 4. 2 Materials/items/Equipmenti. Test boardii Ohmmeteriii. Meggeriv.

Indicator tester (Neon Tester) 4. 3 Diagrams(attached) 4. 4 Description 4. 5 Precaution 4. 6 Conclusion EXPERIMENT05: 5. 0 Title: Electrical Soldering5.

1 Aim: At the end of the exercise, the studentsshould be able to carry out;

i. Solderingbit methodii. Stick" Methodiii. Potand Laddie Method. (Metal) 5. 2 Materials/Equipmenti. Pliersii.

Sharp knifeiii. Soldering bitiv. Fluxv. Blow lampvi.

Solder vii. Rubber Tapeviii. Cambric tape (empire tape ix. Black Insulating tape. 5. 3 Description5.

3. 1 Soldering bit methodi. Smearjoint with resinous fluxii. Applytinned bit under the joint the heat penetrates it. iii Apply stick of

solder to the joint until thesolder flows freely through it5. 32 Stick methodi. Heat joint with a b low lampii.

Apply flux to the jointiii. Apply stick of solder to the joint until thesolder Hows freely through it. 5. 3. 3 Pot andladdle method (heavy duty)i. Heatsolder pot until the solder is running freely.

ii. When the solder as reached workingtemperature, transfer from the pot with a ladle. iii. Asthe solder is being pour over the prepared joint, it is caught by another ladleplaced under the joint. iv. This action is repeated until the solderpenetrates the joint, 5. 4 Precaution 5. 5 Conclusion EXPER1MENT 06: 6.

0 Title: Electric Motor Installation 6. 1 Aim: At the end of theexercise, students should be able to wire Electric motors using: i. Direct-On-LineStarterii. AutoTransformer Starter iii. ResistanceStarter iv. Star-DeltaStarter 6. 2 Material/Itemsi.

Contractorsii. IsolatorHi. Delayon-timer/delay off-timeriv. Overload relayv. Limitingswitchvi. Currenttransformer, V, vii.

Ammeter, voltmeter, frequency meterviii. Start/Stop buttonix Pilotlamps (red, green, amber) 6. 3 Diagrams(attached) 6. 4 Description(operation) 6. 5 Precaution 6. 6 Conclusion