EE3102 and EE3104
Isolation, testing, recommissioning and verification workbook
15852 and 29468 19,20

Student name

EE3102 Isolation, recommissioning and testing
EE3104 Isolate and test assignment

Name .....

1 What **function** and **scale** is the meter set to when testing for isolation?

……

2 Explain what "**test before touch**" means

……

3 Explain the steps of the "**prove – test – prove**" method

Prove ……

Test ……..

Prove ……

4 How does a volt stick detect and indicate?

……

5 What is a disadvantage of a volt stick compared to a voltmeter

……

6 Explain what the colours indicate in a single phase 3 wire cable

Red ……

Black ……..

Green ……

7 Which coloured wire from Q6 should indicate on a volt stick? ……

8 What does tagging mean ? ……

9 What is the purpose of tagging? ……

……..

10 What is the legal position regarding tagging for isolation?

……

……..

11 List 5 forms of mechanical energy that may require isolating before work is commenced

……..

……..

……..

……..

……..

12 Who can remove the lock on the isolator supplying a circuit you have isolated ?

……..

13 What issue can arise when using a neon screw driver?

……..

14 Are you safe to work on a circuit after you have pulled the fuse, put it in your pocket and tested for isolation? ……...…

15 Why ? ……

……..

16 List 5 items of PPE or associated equipment that you would consider using when isolating by removing subcircuit tails in a large switchboard

……..

……..

……..

……..

……..

15 How many volts would you expect to measure across the following locations or coloured cables?

	Expected voltage
White to blue	
Green to red	
Black to green	
Red to black	
Earth stake to red	
Red to red	
Red to hot water cylinder copper pipe	

16 Why do you need to switch off the load before isolating a circuit

……..

17 Why is it important to wear safety glasses when testing for voltage on a switch board?

……..

……..

18 Explain the difference between switching off and isolation

……..

……..

19 State 2 disadvantages when using test lamps

……..

……..

20 Explain the procedure for "**removing the load side tails**" at a fuse board.

……..

……

……..

21 List 4 methods of achieving electrical isolation

…….....

…….

…….

…….

22 List 3 types of switches that when switched off are unacceptable as a means of isolation

……..

……..

……..

23 List 4 things that could have caused the circuit to be worked on after you have isolated it to be still live when you checked it with your test instrument

…….

…….

…….

…….

24 Why does the person in charge of the plant need to be kept informed of all proposed change in status of plant being live or not

……..

……..

……..

25 List 4 adverse consequences of incorrect isolation

…….

…….

…….

…….

26 Explain why switching off a light at a light switch may still allow a light fitting to be live, even when the lamp is not glowing

……...

……

……

27 Explain the need to have an isolation and recommissioning plan or set of steps prior to carrying out those tasks

……

……

28 Why are outlets and lighting wired in parallel

……

……

29 Give a definition for the term “fitting”

……

……

30 Give a definition for the term “electrical appliance”

……

…….

31 List the steps you would take to ensure that a hot water cylinder in a high rise building, to be replaced by a plumber, is left safe for him to work on

a) ……ensure you are going to isolate the correct equipment

b) ……..

c) ……..

d) ……..

e) ……..

f) ……

g) ……

h) ……

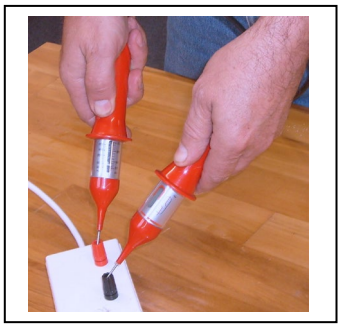
i) ……

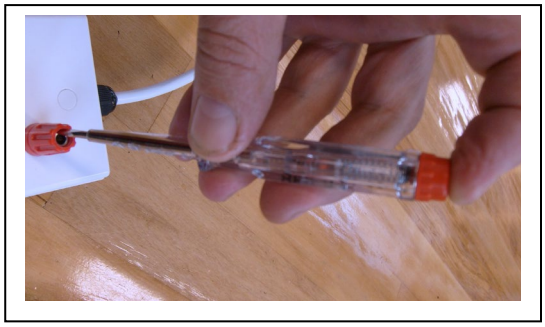
j) ……

k) ……

l) ……advise the plumber the cylinder is safe to replace

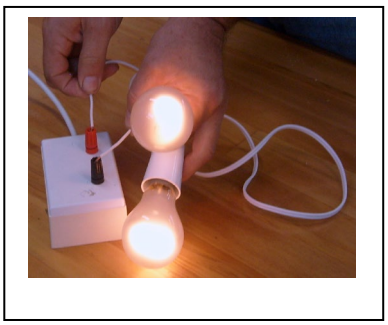
32 Name each testing device illustrated below





……

……



……

……

……

……

EE3102 and EE3104 Testing and verification using ASNZS 3000 and 3760 assignment

Name .....

1 Explain 3 main reasons for testing after installation in a building or repairs made to an installation or an appliance.

……

……

……

2 What test checks the state of insulation

……

3 What value of IR must be exceeded to pass an insulation resistance test

……

4 Why do outlets need to be polarity tested

……

……

……

5 What timing and residual current requirements need to be met for a general purpose RCD

……

6 What is the task of a protective earthing conductor

……

……..

7 What value does a protective earthing conductor need to meet in a supply lead to an appliance to be considered safe

……

8 Does a class 2 appliance need to pass an earth continuity test? Why?

……..……

……

9 In a building what value does the main earth need to be to pass the test

……

10 What is the difference between a bond and an earth?

……

……..

11 What ohmic value must the green wires be in the TPS cables going from the switchboard to the outlets

……..

……..

12 What is the difference between verification and testing

……

……

……

13 List 10 items that could be a visual verification check

……I……

……I……

……I……

……I……..……..

……I……

14 List the 6 mandatory test according to ASNZS3000

……

……

……

…….

…….

…….

15 Describe in detail how to carry out one of these test and what result would constitute a pass

……..

……..

……..

……..

……..

16 Which two tests under ASNZS 3000 need to be carried out live

……

……

17 According to ASNZS 3000 what type of RCD must be used in NZ

……

18 What value of impedence from table 8.1 in ASNZS 3000 must a 16A C type circuit breaker be to pass a loop impedance test

……