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FAN MANUFACTURING TECHNICIAN



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TRAINER GUIDE

National Vocational Certificate Level 2

Version 1 - October, 2019



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Introduction

Competence-based training helps to bridge the gap between what is taught in training and what tasks will be performed on the job. Training trainees to perform actual job functions helps to ensure that future front-line workers have the skills, knowledge and abilities required to perform their jobs properly, safely and effectively. In addition to competence-based training, assessment based on the performance of actual work competencies helps to ensure that:

- trainees are performing their work tasks as safely as possible
- performance gaps are recognized prior to serious incidents
- training can be implemented to improve competence.

There are significant benefits to competence-based training:

1. Cost effectiveness

Since training activities and assessments in a competence-based approach are goal-oriented, trainers focus on clearly defined areas of skills, knowledge and understanding that their own industry has defined in the competence standards. At the same time, trainees are more motivated to learn when they realize the benefits of improved performance.

2. Efficiency

The transfer gap between the training environment and working on the job is reduced substantially in a competence-based approach. This is because training and assessment are relevant to what needs to be done on the job. As a result, it takes less time for trainees to become competent in the required areas. This, in turn, contributes to improved efficiency where training and assessment are concerned.

3. Increased productivity

When trainees become competent in the competence standards that their own industry has defined, when they know what the performance expectations are and receive recognition for their abilities through successful assessments, they are likely to be more motivated and experience higher job satisfaction. The result is improved productivity for organizations. The communication and constructive feedback between future employers and employees will improve as a result of a competence-based approach, which can also increase productivity.

4. Reduced risk

Using a competence-based approach to training, development, and assessment, employers are able to create project teams of people with complementary skills. A trainee's record of the skills, knowledge and understanding relating to the competence standards they have achieved can be used by a future employer to identify and provide further relevant training and assessment for new skills areas. Competence standards can shape employee development and promotional paths within an organization and give employees the opportunity to learn more competencies beyond their roles. It can also provide organizations with greater ability to scale and flex as needed, thereby reducing the risk they face.

5. Increased customer satisfaction

Employees who have been trained and assessed using a competence-based approach are, by the definition of the relevant competence standards, able to perform the required tasks associated with a job. The knock-on effect is that, in service-related industries, they are able to provide high service levels, thereby increasing customer satisfaction. In production or manufacturing industries, they are able to work closely to industry standards in a more effective and efficient way.

Modelling of skill

Modelling (or demonstrating) a skill is a powerful tool, which is used in vocational training. The instructions for trainers for demonstration are as under:

- a) Read the procedure mentioned in the Trainer Guide for the relevant Learning Unit before demonstration.
- b) Arrange all tools, equipment and consumable material, which are required for demonstration of a skill.
- c) Practice the skill before demonstration to trainees, if possible.
- d) Introduce the skill to trainees clearly at the commencement of demonstration.
- e) Explain how the skill relates to the skill(s) already acquired and describe the expected results or show the objects to trainees.
- f) Carry out demonstration in a way that can be seen by all trainees.
- g) Use the same tools and materials that the learner will be using.
- h) Go through EACH of the steps involved in performing the skill.
- i) Go SLOWLY - describe each step as it is completed.
- j) Encourage the learners to move around and watch what you are doing from a number of different angles.
- k) Identify critical or complex steps, or steps that involve safety precautions to be followed.
- l) Explain theoretical knowledge where applicable and ask questions to trainees to test their understanding.
- m) Try to involve the learners: Ask them questions about why they think the process may work that way.
- n) Repeat critical steps in demonstration, if required.
- o) Summarize the demonstration by asking questions to trainees.

Involvement in the process (actively seeing) is important at this stage. When you work on getting involved, getting people to participate, you make them a part of what is happening. Questions for clarification or explanation are important throughout the demonstration. It is up to the learners to ask questions about things they do not understand, but it is also important for trainers to seek out and elicit questions from learners. A trainer may need to do repeated demonstrations of difficult or complex skills.

Lesson plans

This manual provides a series of lesson plans that will guide delivery of each module for the *Assistant Electrician* qualification. It is important for trainers to be flexible and be ready to adapt lesson plans to suit the context of the subject and the needs of their trainees.

Good teachers acknowledge that CBT means each and every trainee in the class learns at a different speed. The good teacher is prepared to throw aside the day's lesson plan and do something different (and unplanned) for the class even if it means 'writing' lesson plans for each trainee to match their learning pace for that day or week.

Learning by doing is different from learning theory and then applying it. To learn to do something, trainees need someone looking over their shoulder saying 'it's not quite like that, it's like this', 'you do it like this because ...', or even 'tell me why you chose to do it like this?'

In this way, trainees learn that theoretical knowledge is meaningless if it is not seen in the context of what they are doing. In other words, if a trainee doesn't know why they do something, they will not do it competently (skills underpinned by knowledge = competent performer).

This is how an *Assistant Electrician* acquires a practical grasp of the standards expected. It's not by learning it in theory, but because those standards are acquired through correction by people who show what the standards are, and correct the trainee where they do not meet those standards, and where they repeat it correction until they have internalised those standards.

FORMAT FOR LESSON PLAN			
Module5: 072200901 Measure basic electrical units in series and parallel circuits.			
Learning Unit 1: Measure electrical current and resistance			
Methods	Key Notes	Media	Time
The tools, equipment and methods used to measure electrical current and resistance			
Introduction			
This session will introduce learners to tools, equipment and methods used to measure electrical current and resistance by using presentation, demonstration, question and answer, and practical skills development.			
Main Body			
<ul style="list-style-type: none"> • Arrange tools, material and equipment for measurement of electric current • Construct series arrangement of resistances in a closed loop circuit • Construct parallel arrangement of resistances in a closed loop circuit • Perform measurement of electrical resistance in a series or parallel circuit • Perform measurement of alternating current in a series or parallel circuit • Perform measurement of direct current in a series / parallel circuit Arrange a question and answer session to clarify trainee understanding.			
Conclusion			
To conclude the session, review the the tools, equipment and methods used to measure electrical current and resistance. Give learners the opportunity to ask questions.			
<u>Assessment</u>			
Question and answer, discussion groups with feedback, observation of practice skills development			
Total time: 20 Hours			

Modules and Learning Units

Course: Fan Manufacturing Technician Level-2 (Assistant Electrician)	Total Course Duration: 220 Hours
Course Overview:	
<p>The purpose of the Fan Manufacturing Technician Level-2 (Assistant Electrician) course is to engage young people with a programme of development that will provide them with the knowledge, skills and understanding to start this career in Pakistan. The course has been developed to address specific issues, such as the work force availability within the country, and meeting and exceeding the needs and expectations of leather products industry.</p>	

Module	Learning Unit	Duration
Module 5: Measure basic electrical units in series and parallel circuits.	LU1: Measure electrical current and resistance LU2: Perform voltage measurement LU3: Measure electrical power LU4: Perform capacitance and inductance measurement LU5: Perform low voltage transformer test LU6: Construct rectifier circuit	100 Hours

Teaching & Learning Activities

Module 5: Measure basic electrical units in series and parallel circuits.			
Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
LU1: Measure electrical current and resistance	<p>Begin this session with an illustrated presentation on measuring electrical current and resistance. Ensure that the presentation addresses the following points,</p> <ul style="list-style-type: none"> • Arrange tools, material and equipment for measurement of electric current • Construct series arrangement of resistances in a closed loop circuit • Construct parallel arrangement of resistances in a closed loop circuit • Perform measurement of electrical resistance in a series or parallel circuit • Perform measurement of alternating current in a series or parallel circuit • Perform measurement of direct current in a series / parallel circuit <p>Arrange a question and answer session to clarify trainee understanding.</p> <p>Show learners videos or illustration related to measurement of electrical current and resistance through different instruments.</p> <p>Demonstrate the use of different equipment for measuring electrical current and resistance</p> <p>Prepare either:</p> <ul style="list-style-type: none"> • A flip chart • A PowerPoint slide • A handout <p>...showing the key topics about measuring electrical current and resistance. Go through all the key topics</p>	Classroom Training Winding Shop Real or realistic Winding Shop in Fan manufacturing environment	Videos or illustration related to measurement of electrical current and resistance through different instruments Ampere meter Ohm meter Resistance decade box AC/DC supplies Multimeter

briefly and then allocate **one key topic** to each group.

Learners need to work in their small groups discussing the key topic that has been allocated to their group. Each group should use a sheet of flip chart paper to record **three main points** from their discussions that relate to **their key topic**.

After the discussion, begin the feedback session. Ask one group to come to the front of the class with their flipchart. Put up the flipchart where it can be easily seen by other learners. Ask the group to share the main points they have recorded for their key topic for measuring electrical current and resistance. Discuss these main points briefly with the whole group. Learners should make additional notes **on the flip chart** to record additional points their group had not identified.

Then ask the next group to share their flipchart showing the main points they have recorded for the next key topic. Repeat the discussion process. Continue until you have covered all the key topics.

End the group discussion activity with a summary. Photograph or scan all the flipcharts and use these to create a handout to distribute to all learners.

To prepare for practical sessions, divide the trainees in small groups. Provide each group with a task to measure electrical current and resistance. Check that each trainee understands their task.

Learners must be able to practice and develop their knowledge and skills relating to measure electrical current and resistance in an appropriate practical setting. Ensure that learners have the opportunity to ask questions to support their understanding.

<p>LU2: Perform voltage measurement</p>	<p>Begin this session with an illustrated presentation on performing voltage measurement. Ensure that the presentation addresses the following points where appropriate:</p> <ul style="list-style-type: none"> • Arrange tools, material and equipment for measurement of voltage • Perform measurement of AC Voltage in a series or parallel circuit • Perform measurement of DC voltage in a series or parallel circuit <p>Show learners videos or illustration related to voltage measurement through voltmeter. Demonstrate the use of equipment for performing voltage measurement.</p> <p>To prepare for practical sessions, divide the trainees in small groups. Provide each group with a task to perform voltage measurement. Check that each trainee understands their task.</p> <p>Display a flip chart showing the following key question related to measuring electrical voltage: <i>‘(How to perform voltage measurement?)’</i></p> <p>Give each learner a sheet of paper and asked them to write their name at the top. Explain to learners that they will be sharing their work with other learners.</p> <p>Ask learners to write silently for 3-5 minutes answering the question displayed on the flip chart. When learners have completed writing, instruct them to pass their paper to the learner on their left. Each learner will read what their partner has passed to them and write a response. This will also be done silently.</p> <p>After another 2-3 minutes, instruct the learners to pass the paper to their left a second time. Repeat the same</p>	<p>Classroom Training Winding Shop Real or realistic Winding Shop in Fan manufacturing environment</p>	<p>Videos or illustration related to voltage measurement through voltmeter Volt meter Series and parallel circuits AC/DC power supply</p>
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	<p>procedure, also done in silence.</p> <p>At the end of the activity, ask the learners to return the paper to the original writer. Allow learners a few moments to read over the responses to their writing.</p> <p>Ask learners to work in pairs to reflect on and discuss the responses to the question on the flip chart.</p> <p>When this activity is concluded, collect the papers and make copies for each learner.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to measure electrical voltage in an appropriate practical setting. Ensure that learners have the opportunity to ask questions to support their understanding.</p>		
<p>LU3: Measure electrical power</p>	<p>Begin this session with an illustrated presentation on how to measure electrical power. Ensure that the presentation addresses the following points,</p> <ul style="list-style-type: none"> • Arrange tools, material and equipment for measurement of electrical power • Perform measurement of electrical power for series or parallel circuit <p>Show learners videos or illustration related to measurement of electrical power measurement through watt meter</p> <p>Demonstrate the use of equipment for performing electrical power measurement.</p> <p>Prepare either:</p> <ul style="list-style-type: none"> • A flip chart • A PowerPoint slide • A handout <p>...showing key topics for measuring electrical power. Learners need to work in small groups discussing the</p>	<p>Classroom Training Winding Shop</p> <p>Real or realistic Winding Shop in Fan manufacturing environment</p>	<p>Videos or illustration related to electrical power measurement through watt meter</p> <p>Watt meter</p> <p>AC/DC power supply</p> <p>Different types of load (lamp, fan, electric iron, single phase motor)</p>

	<p>key topics. Each group should make notes from their discussions that identify three main points that related to each key topic.</p> <p>After the discussion, begin the feedback session. Ask one group to share the main points they have recorded for the first key topic for measuring electrical power. Discuss these main points briefly with the whole group. Learners should make additional notes to record additional points their group had not identified.</p> <p>Then ask the next group to share the main points they have recorded for the second key topic. Repeat the discussion process. Continue until you have covered all the key topics.</p> <p>End the group discussion activity with a summary.</p> <p>To prepare for practical sessions, divide the trainees in small groups. Provide each group with a task to measure electrical power. Check that each trainee understands their task.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to measure electrical voltage in an appropriate practical setting. Ensure that learners have the opportunity to ask questions to support their understanding.</p>		
<p>LU4: Perform capacitance and inductance measurement</p>	<p>Begin this session with an illustrated presentation on performing capacitance and inductance measurement. Ensure that the presentation addresses the following points</p> <ul style="list-style-type: none"> • Arrange tools, material and equipment for measurement of capacitance and inductance • Perform measurement of capacitance and inductance with LCR meter • Perform open circuit or short circuit test for the 	<p>Classroom Training Winding Shop Real or realistic Winding Shop in Fan manufacturing environment</p>	<p>Videos or illustration related to capacitor and inductor measurement through different instruments Capacitors of different values Inductors of different values LCR meter Ohm meter</p>

	<p>capacitor.</p> <p>Show learners videos or illustration related to capacitance and inductance measurement through different instruments.</p> <p>Demonstrate the use of equipment for performing capacitance and inductance measurement.</p> <p>Learners need to devise 10 quiz questions with answers based on measuring capacitance and inductance. They must make sure their questions cover key topics for measuring capacitance and inductance.</p> <p>Issue each learner with 10 blank cards. Each learner should number the cards and write their name on one side with a question about measuring capacitance and inductance. On the reverse of the card, they should write an appropriate answer to their question.</p> <p>For the quiz, arrange learners in two equal teams. Ask one learner to keep score using a suitable score-card. Player 1 for Team A asks one of their questions to Player 1 of Team B, who needs to answer the question. Discuss the answer with the group and ask the group to determine if the answer is correct. Player 1 of Team A then confirms the answer they had devised. (You need to correct answers if the learner's answer was not wholly correct.)</p> <p>The scorekeeper records 1 mark for a correct answer under the appropriate team's score column. Play then passes to Player 1 of Team B, who asks their question to Player 1 of Team A, and so on.</p> <p>Total the scores at the end of the quiz to see which team won.</p> <p>After the quiz, collect learners' question/answer cards and check that answers provided were correct. Return</p>		Multimeter
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	<p>any incorrect answers to learners and ask them to change their answer to the correct one.</p> <p>To prepare for practical sessions, divide the trainees in small groups. Provide each group with a task of performing capacitance and inductance measurement. Check that each trainee understands their task.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to measure capacitance and inductance in an appropriate practical setting. Ensure that learners have the opportunity to ask questions to support their understanding.</p>		
<p>LU5: Perform low voltage transformer test</p>	<p>Begin this session with an illustrated presentation on performing low voltage transformer test. Ensure that the presentation addresses the following points</p> <ul style="list-style-type: none"> • Arrange tools, material and equipment for low voltage transformer test • Perform open circuit or short circuit test for the low voltage transformer <p>Show learners a videos or illustration related to performing low voltage transformer test.</p> <p>Demonstrate the use of equipment for performing low voltage transformer test.</p> <p>Display a flip chart showing the following key question related to performing low voltage transformer test: <i>'(Why low voltage transformer test is performed for fans?)'</i></p> <p>Give each learner a sheet of paper and asked them to write their name at the top. Explain to learners that they will be sharing their work with other learners.</p> <p>Ask learners to write silently for 3-5 minutes answering the question displayed on the flip chart. When learners have completed writing, instruct them to pass their paper to the learner on their left. Each</p>	<p>Classroom Training Winding Shop Real or realistic Winding Shop in Fan manufacturing environment</p>	<p>Videos or illustration related to performing low voltage transformer test Low voltage transformer with different turn ratio Ampere meter Volt meter Ohm meter Multimeter</p>

	<p>learner will read what their partner has passed to them and write a response. This will also be done silently.</p> <p>After another 2-3 minutes, instruct the learners to pass the paper to their left a second time. Repeat the same procedure, also done in silence.</p> <p>At the end of the activity, ask the learners to return the paper to the original writer. Allow learners a few moments to read over the responses to their writing.</p> <p>Ask learners to work in pairs to reflect on and discuss the responses to the question on the flip chart.</p> <p>When this activity is concluded, collect the papers and make copies for each learner.</p> <p>To prepare for practical sessions, divide the trainees in small groups. Provide each group with a task of performing low voltage transformer test. Make sure that each trainee understands their task.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to perform low voltage transformer test in an appropriate practical setting. Ensure that learners have the opportunity to ask questions to support their understanding.</p>		
<p>LU6: Construct rectifier circuit</p>	<p>Begin this session with an illustrated presentation on how to construct rectifier circuit. Ensure that the presentation addresses the following points,</p> <ul style="list-style-type: none"> • Arrange tools, material and equipment for the rectifier circuit • Construct half wave and full wave rectifier circuit • Construct bridge arrangement from diodes for full wave rectification • Measure output voltage of rectifier with oscilloscope. <p>Show learners a videos or illustration related to construct rectifier circuit.</p>	<p>Classroom Training Winding Shop Real or realistic Winding Shop in Fan manufacturing environment</p>	<p>Videos or illustration related to construct rectifier circuit Step down transformer Capacitors of different values Diodes of different values Resistors of different values Oscilloscope Bread board AC/DC Power supply</p>

	<p>Demonstrate the use of equipment for constructing rectifier circuit.</p> <p>Prepare either:</p> <ul style="list-style-type: none"> • A flip chart • A PowerPoint slide • A handout <p>...showing key topics for constructing rectifier circuit. Learners need to work in small groups discussing the key topics. Each group should make notes from their discussions that identify three main points that related to each key topic.</p> <p>After the discussion, begin the feedback session. Ask one group to share the main points they have recorded for the first key topic for constructing rectifier circuit. Discuss these main points briefly with the whole group. Learners should make additional notes to record additional points their group had not identified.</p> <p>Then ask the next group to share the main points they have recorded for the second key topic. Repeat the discussion process. Continue until you have covered all the key topics.</p> <p>End the group discussion activity with a summary.</p> <p>To prepare for practical sessions, divide the trainees in small groups. Provide each group with a task of constructing rectifier circuit. Check that each trainee understands their task.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to construct rectifier circuit in an appropriate practical setting. Ensure that learners have the opportunity to ask questions to support their understanding.</p>		
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Frequently Asked Questions

<p>1. What is Competency Based Training (CBT) and how is it different from currently offered trainings in institutes?</p>	<p>Competency-based training (CBT) is an approach to vocational education and training that places emphasis on what a person can do in the workplace as a result of completing a program of training. Compared to conventional programs, the competency based training is not primarily content based; it rather focuses on the competence requirement of the envisaged job role. The whole qualification refers to certain industry standard criterion and is modularized in nature rather than being course oriented.</p>
<p>2. What is the passing criterion for CBT certificate?</p>	<p>You shall be required to be declared “Competent” in the summative assessment to attain the certificate.</p>
<p>3. What are the entry requirements for this course?</p>	<p>The entry requirement for this course is 8th Grade or equivalent.</p>
<p>4. How can I progress in my educational career after attaining this certificate?</p>	<p>You shall be eligible to take admission in the National Vocational Certificate Level-3 in Fan Manufacturing Technician (Winder). You shall be able to progress further to National Vocational Certificate Level-4 in Fan Manufacturing Technician (Supervisor); and take admission in a level-5, DAE or equivalent course. In certain case, you may be required to attain an equivalence certificate from The Inter Board Committee of Chairmen (IBCC).</p>
<p>5. If I have the experience and skills mentioned in the competency standards, do I still need to attend the course to attain this certificate?</p>	<p>You can opt to take part in the Recognition of Prior Learning (RPL) program by contacting the relevant training institute and getting assessed by providing the required evidences.</p>
<p>6. What is the entry requirement for Recognition of Prior Learning program (RPL)?</p>	<p>There is no general entry requirement. The institute shall assess you, identify your competence gaps and offer you courses to cover the gaps; after which you can take up the final assessment.</p>
<p>7. Is there any age restriction for entry in this course or Recognition of Prior Learning program (RPL)?</p>	<p>There are no age restrictions to enter this course or take up the Recognition of Prior Learning program</p>

8. What is the duration of this course?	The duration of the course work is 220 Hours
9. What are the class timings?	The classes are normally offered 25 days a month from 08:00am to 01:30pm. These may vary according to the practices of certain institutes.
10. What is equivalence of this certificate with other qualifications?	As per the national vocational qualifications framework, the level-4 certificate is equivalent to Matriculation. The criteria for equivalence and equivalence certificate can be obtained from The Inter Board Committee of Chairmen (IBCC).
11. What is the importance of this certificate in National and International job market?	This certificate is based on the nationally standardized and notified competency standards by National Vocational and Technical Training Commission (NAVTTTC). These standards are also recognized worldwide as all the standards are coded using international methodology and are accessible to the employers worldwide through NAVTTTC website.
12. Which jobs can I get after attaining this certificate? Are there job for this certificate in public sector as well?	You shall be able to take up jobs in the fan manufacturing industries in the winding shop to assist winder
13. What are possible career progressions in industry after attaining this certificate?	You shall be able to progress up to the level of supervisor after attaining sufficient experience, knowledge and skills during the job. Attaining additional relevant qualifications may aid your career advancement to even higher levels.
14. Is this certificate recognized by any competent authority in Pakistan?	This certificate is based on the nationally standardized and notified competency standards by National Vocational and Technical Training Commission (NAVTTTC). The official certificates shall be awarded by the relevant certificate awarding body.
15. Is on-the-job training mandatory for this certificate? If yes, what is the duration of on-the-job training?	On-the-job training is not a requirement for final / summative assessment of this certificate. However, taking up on-the-job training after or during the course work may add your chances to get a job afterwards.
16. How much salary can I get on job after attaining this certificate?	The minimum wages announced by the Government of Pakistan in 2019 are PKR 17,500. This may vary in subsequent years and different regions of the country. Progressive employers may pay more than the mentioned amount.

17. Are there any alternative certificates which I can take up?	There are some short courses offered by some training institutes on this subject. Some institutes may still be offering conventional certificate courses in the field.
18. What is the teaching language of this course?	The teaching language of this course is Urdu and English.
19. Is it possible to switch to other certificate programs during the course?	There are some short courses offered by some training institutes on this subject. Some institutes may still be offering conventional certificate courses in the field.
20. What is the examination / assessment system in this program?	Competency based assessments are organized by training institutes during the course which serve the purpose of assessing the progress and preparedness of each student. Final / summative assessments are organized by the relevant qualification awarding bodies at the end of the certificate program. You shall be required to be declared "Competent" in the summative assessment to attain the certificate.
21. Does this certificate enable me to work as freelancer?	You can start your small business of stitching leather garments, gloves or other products. You may need additional skills on entrepreneurship to support your initiative.

Test Yourself (Short & Multiple Choice Questions)

1.	What is resistance?	Answer: Generally, the opposition in flow of current is called resistance. It is denoted by capital word R.
2.	Which instrument is used to measure electrical resistance?	Answer: OHM meter is used to measure the resistance. It is operated by switching off main supply.
3.	What is current?	Answer: The rate of flow of electrons in a specific direction is called current. It is denoted by I.
4.	What is voltage?	Answer: The difference of potential between two points is called voltage. OR The pressure used to move electrons in an electric circuit is called voltage. it is denoted by V.
5.	What is electric power?	Answer: The product of voltage and current is called electric power. OR The rate of work done is called power. It is denoted by P.
6.	Which instrument is used to measure electric power?	Answer: WATT meter is used to measure electric power.
7.	What is rectifier?	Answer: Rectifier is a device used to convert AC into DC
8.	What is capacitor?	Answer: A device used to store an electric charge, consisting of one or more pairs of conductors separated by an insulator.
9.	What are the basic three electrical quantities? a) Resistance, Capacitance, Inductance b) Power, Voltage, Conductance c) Voltage, Current, Resistance(Impedance) d) Current, Reluctance, Inductance	Answer: c) Voltage, Current, Resistance(Impedance)
10.	In case of Short Circuit, _____ Current will flow in the Circuit.	Answer:

	<ul style="list-style-type: none"> a) Zero. b) Very Low c) Normal d) Infinite 	d) Infinite
11.	<p>A 240V, 60W lamp has a working resistance of:</p> <ul style="list-style-type: none"> a) 1400Ω b) 60Ω c) 960Ω d) 325Ω 	<p>Answer:</p> <p>c) 960Ω</p>
12.	<p>Voltage drop is the:</p> <ul style="list-style-type: none"> a) Maximum potential b) Potential difference between two points c) Voltage produced by a source d) Voltage at the end of a circuit 	<p>Answer:</p> <p>b) Potential difference between two points</p>
13.	<p>SI unit of charge is:</p> <ul style="list-style-type: none"> a) coulomb b) ampere c) voltage d) watt 	<p>Answer:</p> <p>a) coulomb</p>

