272-R01

BUCKS COUNTY TECHNICAL SCHOOL
MECHATRONICS TECHNOLOGY

NAME: _____ ***START DATE:*** _____/_____/_____
COMPLETION DATE: _____/_____/_____

TASK: Radio Wave Propagation and Modes of Transmission

PERFORMANCE OBJECTIVE: The Student Will Demonstrate Knowledge of RF Propagation by Scoring 80% on a Written Quiz

ENABLING OBJECTIVE: Have an understanding of wavelength and frequency

TOOLS REQUIRED: RF Theory video

SAFETY FACTORS: ***Complete Q01-Q02 and observe all school/classroom safety rules at all times***

ACADEMIC ANCHORS:
M11.A.1.1.2 Express numbers using scientific notation
M11.A.2.1.1 Solve problems operations with rational numbers using rates and percentages
R11.A.1.3.5 Demonstrate after reading understanding of non-fiction text
R11.A.2.1.2 Identify meaning of content specific words used in text

CAREER & WORK ANCHORS:
13.2.11.E Demonstrate essential workplace skills.

PERFORMANCE CHECKLIST:

STUDENT CHECK	***TASK TO BE COMPLETED***	***TEACHER SIGN OFF***
_____	1. Identify academic anchors and complete learning guide AA01	_____
_____	2. View RF Theory Video or theory lesson	_____
_____	3. Complete Performance Sheets	_____
_____	4. Score 80% on RF Theory Quiz	_____

PERFORMANCE LEVEL:
MASTERY ***SATISFACTORY*** ***FAMILIARIZATION*** ***INSTRUCTED/CANNOT PERFORM***

BUCKS COUNTY TECHNICAL SCHOOL – June 17, 2021

_____
INSTRUCTOR'S SIGNATURE

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PERFORMANCE SHEET

ANSWER THE FOLLOWING QUESTIONS:

1. What are two formulas for wavelength? _____

_____

_____

2. What is line of sight propagation? _____

_____

_____

3. What is ionospheric skip? _____

_____

_____

4. What is tropospheric ducting? _____

_____

_____

5. How does a major solar flare affect satellite communications? _____

_____

_____

6. What is the difference between amplitude modulation and frequency modulation?

_____

_____

_____

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PERFORMANCE SHEET

7. What can radio waves reflect or refract off of? _____

_____

_____

8. How does the eleven-year sunspot cycle affect short-wave communication? ____

_____

_____

9. Why don't medium and long waves go very long distances? _____

_____

_____

10. What is the wavelength of a 100 Mhz Signal? _____

GRADING RUBRIC

	Instructed/Cannot 0 points	Familiarization 1 point	Satisfactory 2 points	Mastery 3 points
Safety	Student rarely follows industry standard safety rules	Student needs to be frequently reminded to follow industry standard safety rules	Follows all industry standard safety rules, but required one reminder.	Student always follows all industry standard safety rules
Task	Student is unable to complete task	Student requires frequent assistance to complete task, and/or is familiar with some parts of the task	Student requires very little assistance to complete task, or has only completed task once or twice, but completed it satisfactorily with little to no assistance	Student can perform task with no assistance and has completed the task many times with no errors.

Mastery = 6 points
Satisfactory = 4-5 points
Familiarization = 2-3 points
Instructed cannot perform = <2 points