**Mechanics 9 Engine Operation Test**

Name : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date :\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Section 1: True or False- mark each question with a t or an f if the statement is true or false.** (10 M)

1. A two stroke engine is more fuel efficient than a four stroke. \_\_\_\_\_

2. Four stroke engines generally don’t require mixed gas. \_\_\_\_\_

3. A two stroke engine uses one piston stroke per cycle. \_\_\_\_\_\_

4. The combustion chamber is sealed to form the charge. \_\_\_\_\_\_

5. A diesel engine ignites as result of compression. \_\_\_\_\_\_\_

6. Bio-diesel is a clean-burning alternative fuel. \_\_\_\_\_\_

7. Two strokes engines have more moving parts than a four stroke. \_\_\_\_\_\_

8. Two stroke engines use a rotary valve system. \_\_\_\_\_\_

9. All pistons have the same amount of piston rings. \_\_\_\_\_\_

10. BHP stand for brake horsepower. \_\_\_\_\_\_

**Section 2: Multiple choice-choose the correct answer.** (10 M)

1. The diesel engine component that preheats air in the combustion chamber is:

 a) Spark plug

 b) Ignition

 c) Glow plug

 d) Super charger

2. An alternative fuel that is clean burning and produced from renewable resources is:

 a) Nitro glycerin

 b) Sulfuric acid

c) Biodiesel

 d) High octane gasoline

3. Most two stroke engines require gas that is:

 a) Pre-mixed

 b) Oil injected

 c) Low octane

 d) Dyed

4. TDC stands for:

 a) Take down communism

 b) Tripe double coffee

c) Top dead center

 d) Top dead carrier

5. BDC stands for:

 a) Bottom dead center

 b) Bottled diet coke

 c) Brake dynamo compression

 d) Bottom displaced carburetor

6. The engine block consists of a cylinder block and a:

 a) Piston

b) Crankcase

 c) Fuel pump

 d)

7. The percentage of energy converted into work in an internal engine is:

 a) 10%

 b) 30%

 c) 60%

 d) 100%

8. A gear located on the crankshaft that drives other engine parts:

 a) Crank gear

 b) Drive pulley

 c) Parking brake

 d) Ring gear

9. The difference between a V-engine and an Inline 6 is:

 a) Horsepower

 b) Fuel type

 c) Configuration of pistons

 d) Fuel economy

10. Two types of internal combustion engines are:

 a) Jet engine and steam engine

 b) Steam engine and a diesel engine

 c) Jet engine and a diesel engine

 d) Gasoline engine and diesel engine

**Section Three: Short Answer- answer each question accurately and briefly**.

1. Explain the main differences between diesel and gasoline engines. (3M)

2. List four components of any internal combustion engine. (4M)

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3. Name the three different types of piston rings. (3M)

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4. List three two stroke engine characteristics. (3M)

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5. What does the *injection pump* on a diesel engine do? (2M)

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6. The first diesel engine was patented and invented by this German man. (2M)

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**Section Four: Written Response- select one topic and write a well-supported discussion explaining the answer. You may use a diagram to provide detail to your answer.** (20 M) **Pick only ONE topic**

Topic 1: What is the difference between a two stroke engine and four stroke engine?

Topic 2: What is the difference between a diesel and gasoline engine?

Topic 3: What are the main concerns and problems with internal combustion engines; what are some advantages?

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