

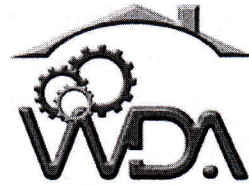
MVM -Transmission

T109

Friday, 01/11/2013

8:30-11:30 AM

WORKFORCE DEVELOPMENT AUTHORITY



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**ADVANCED LEVEL NATIONAL EXAMINATIONS, 2013,
TECHNICAL AND PROFESSIONAL TRADES**

EXAM TITLE: Transmission

OPTION: Motor Vehicle Mechanics (MVM)

DURATION: 3hours

INSTRUCTIONS:

The paper contains **Three(3)** Sections:

Section **I:** Fifteen (**15**) questions, **all Compulsory;** **55marks**

Section **II:** Five (**5**) questions, **Choose any Three (3);** **30marks**

Section **III:** Three (**3**) questions, **Choose any One (1);** **15marks**

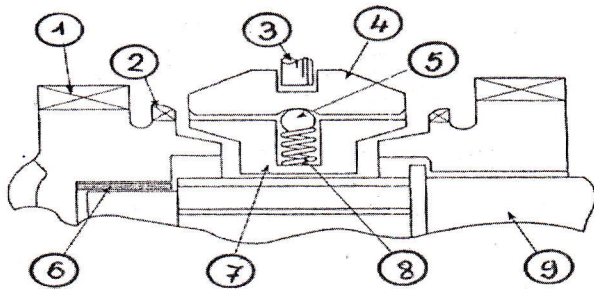
Section I: Answer all the 15 questions.

55marks

01. When the clutch is engaged, between what parts is the friction disk clamped? **2marks**
02. Name three causes of clutch slippage while engaged. **3marks**
03. Can you identify reasons why the diaphragm spring clutch is now the most common type of clutch used in light vehicles? **6marks**
04. What is the basic purpose of the gearbox? **3marks**
05. List the four main components in the simple epicyclic gear train? **4marks**
- 06 a) Explain what is meant by "OVERDRIVE". **1mark**
b) What are its positive effects in the system? **3marks**
07. What are the advantages of a two-piece propeller shaft? **4marks**
08. Sketch three simple layouts of rear hub bearing and axle shaft arrangements. **3marks**
09. List four functions of a suspension damper to perform security of passengers & vehicles. **4marks**
10. What are the requirements that must be fulfilled by steering ball-joint? **5marks**
11. Which faults may be present when a gear of manual gearbox jumps out? **4marks**
12. What are the effects of excessively low clutch play? **5marks**
13. Is a hydrodynamic torque converter made up of which components? **4marks**
14. What is meant by roll centre (instantaneous centre)? **1mark**
15. What are the benefits of tubeless tyres? **3marks**

Section II: Choose and answer any three (3) questions 30marks

16. a) Describe the diagram below: **9marks**



- b) What is it? **1mark**

17. The modern trend is to use leaf springs containing a single leaf only. What are the advantages and disadvantages over the old system? **10marks**
18. What are the advantages/ disadvantages of a front-wheel drive used in vehicle? **10marks**
19. a) What are the futures of drum brakes? **3marks**
b) What requirements are made of brake pads? **7marks**
20. What are the requirements of tyres (in general)? **10marks**

Section III: Choose and Answer any one(1) question 15marks

21. Describe the symptom (how would the driver notice) and the cause (what caused the problem to occur) of the following:
a. Clutch drag; **10marks** b. Clutch slip; **5marks**
22. a) How is the hydraulic brake filled? **10marks**
b) What inspections are carried out on the hydraulic brakes? **5marks**
23. a) Name six causes of the front-wheel shimmy-low speed. **6marks**
b) Name nine preliminary things that should be done before you make the front alignment checks? **9marks**