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Total No.of Pages:01

**BTECH(AE) –2014**  
**AUTOMOTIVE TRANSMISSION**  
**Paper Code (BTAE-502)**  
**Paper Id. [A2062]**

Time: 03 Hrs

Max. Marks: 60

Instructions to Candidates:

- 1) Section-A is compulsory, consisting of ten questions carrying two marks each
- 2) Section-B contains five questions carrying five marks each and student has to attempt any four questions
- 3) Section-C contains three questions carrying ten marks each and student has to attempt any two questions
- 4) Draw neat and clean diagram where required and assume any missing data suitably.

**SECTION –A**

2X10

- Q1 (i) What is tractive effort?  
(ii) What do you mean by trailer trucks?  
(iii) Why multiplate clutches are preferred in two wheelers instead of single plate clutch?  
(iv) What is the function of torsion damping helical springs in single plate clutch assembly?  
(v) Reverse gear in most of the gearboxes is straight tooth spur gear. What is the reason?  
(vi) What is the purpose of providing grooves on the internal surfaces of synchromesh ring?  
(vii) Why turbocharged vehicles are advised to stop after few seconds of ideal engine running?  
(viii) Draw the speed vs. torque graph for a fluid coupling.  
(ix) What do you mean by "ETC-i"?  
(x) Explain the process of double declutching. What is its drawback?

**SECTION – B**

- Q2 List the advantages and disadvantages of fluid flywheel. 5  
Q3 Discuss the classification of transmission system based on the mode of power transmission in automobiles? 5  
Q4 List advantages and disadvantages of automatic transmission used in passenger cars. 5  
Q5 Explain the construction and working of *sprag* type over-running clutch? 5  
Q6 What is the advantage of paddel shift mechanism over other automatic transmission systems? 5

**SECTION –C**

- Q7 (i) Describe in detail the performance characteristics of *Modified Ward Lenard Control* system? 6  
(ii) What is the advantage of using diaphragm spring in place of helical spring for the actuation of pressure plate inside a clutch ? 4  
Q8 What are hydrostatic drives? Explain the constructional details and working principal of Janny Hydrostatic drive in detail. 10  
Q9 (i) What is the function of accumulator in hydraulic actuation system of automatic transmission system? 5  
(ii) Draw the block diagram representation of powerglide transmission system. 5

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