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Total Number of Pages: 02

B.TECH
PECI5417

8th Semester Regular / Back Examination 2016-17
PERFORMANCE AND EVALUATION OF PAVEMENTS

BRANCH: CIVIL ENGINEERING

Time: 3 Hours

Max Marks: 70

Q.CODE: Z406

Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.

- Q1 Answer the following questions: (2 x 10)**
- a) Define International Roughness Index?
 - b) What is reflection cracking?
 - c) Define is structural number?
 - d) What are the different types of overlay?
 - e) Define skid number.
 - f) What are the uses of Merlin machine?
 - g) Write any two factors which affect the skid resistance?
 - h) What are the different types of cement concrete pavement?
 - i) What is Performance Index?
 - j) Differentiate between rutting failure and fatigue failure.
- Q2 Briefly explain the method of measurement of rebound surface deflection using Benkelman beam. Explain the need and details of the corrections required for measurement of rebound surface deflection of the existing pavement. (10)**
- Q3 a) What are the merits and demerits of destructive and non-destructive methods of structural evaluation of pavements? (5)**
- b) With a flow chart, explain the process of back-calculation of flexible pavement layer moduli using microcomputer methods. (5)**
- Q4 a) Explain the various types of failures in cement concrete pavements and their causes. (6)**
- b) What are the different steps in formulating Present Serviceability Index? (4)**
- Q5 a) With a neat sketch, explain the working principle of a geophone used for measuring vertical rebound deflection of the pavement surface due to FWD loading. (6)**
- b) What are the factors affecting the pavement performances. (4)**

- Q6** a) Explain HMA overlay on PCC pavement. (4)
b) What are the distresses develop in flexible pavement. Explain briefly. (6)
- Q7** a) Briefly explain the overlay design of existing pavement by AASHTO method. (7)
b) State the purpose of pavement evaluation. (3)
- Q8** **Answer all Questions.** (2.5 x 4)
- a) Dynamic cone penetrometer
 - b) HVS Laser Profiler
 - c) Bump integrator
 - d) Road surface deflectometer