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**Question Paper Code : 10452**

M.E./M.Tech. DEGREE EXAMINATION, APRIL/MAY 2019.

-First Semester

Construction Engineering and Management

CN 5102 — CONSTRUCTION EQUIPMENT

(Regulations 2017)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. State the reasons for planning of an equipment used in construction.
2. What are the various methods by depreciation cost is evaluated?
3. Name any four earth work equipment.
4. Differentiate articulated truck and rigid frame trucks.
5. Enumerate the factors govern the production of dragline.
6. What are the different methods of rock blasting.
7. Differentiate pan mixers and drum mixers.
8. State the various components of wet mix macadam plant.
9. State the role of forklifts in construction industry.
10. What are the drive variants of conveyer belt system?

PART B — (5 × 13 = 65 marks)

11. (a) (i) Explain in detail the factors to be considered in operating cost of transportation equipment.  
(ii) Explain preventive maintenance strategy in a concrete plant.

Or

- (b) (i) Explain the components of safety management system.  
(ii) Explain the principle and steps involved in replacement analysis.
12. (a) (i) Explain the production cycle of a self-loading scraper.  
(ii) Explain the function, operation and advantages of Backhoe loader.

Or

- (b) (i) Explain the classification, operation of compactors.  
(ii) Describe the basic configuration of grader and state its function.
13. (a) (i) Describe the basic configuration and working of a trailing suction hopper dredger.  
(ii) Explain percussive rock drilling method.

Or

- (b) (i) Explain multi stage well point system used for dewatering excavation.  
(ii) Explain mechanical method of demolition using long boom hydraulic crushers.
14. (a) Explain the various equipments and stages in process of M-Sand production.

Or

- (b) (i) Explain the process of making bituminous concrete by bituminous batch hot mix plant.  
(ii) Explain the essential features of pavers and screed adjustment.

15. (a) (i) Explain the factors affecting hoisting capacity of a mobile crane.  
(ii) Explain the salient features of automatic aggregate weigh batching system in a concrete mix plant.

Or

- (b) (i) Explain the configuration of modified cranes for heavy lifting of precast concrete elements.  
(ii) Write notes on bucket elevators for vertically transportation of materials.

PART C — (1 × 15 = 15 marks)

16. (a) It is proposed to construct a highway over an embankment connecting a overpass. Explain the planning and construction with suitable equipment the construction of the structure.

Or

- (b) Explain the equipment and construction for bored cast in situ and precast concrete pile foundation.