

Diploma in Civil Engineering
Term-End Examination
June, 2008

BCEE-052 : CONSTRUCTION EQUIPMENT

Time : 2 hours

Maximum Marks : 70

Note : Question number 1 is **compulsory**. Attempt **four** more questions from questions number 2 to 6.

1. Select the correct alternative from the given four choices for each of the following questions. 1×14=14
- (i) The best method of construction dispute settlement is
- (a) by direct negotiations between the client and the contractor
 - (b) through courts
 - (c) through arbitration
 - (d) All of the above

(ii) For the execution of a construction project efforts are essential from

- (a) Administration only
- (b) Management only
- (c) Organisation only
- (d) Combined efforts of all the three

(iii) Which of the materials is **not** treated as road metal ?

- (a) Asphalt
- (b) Coal
- (c) Coal tar
- (d) Pitch

(iv) A crane is used for

- (a) Boring holes in rocks
- (b) Transporting heavy loads
- (c) Lifting and placing loads at desired place
- (d) Compacting earth fills

(v) Power shovels can be used for

- (a) Stripping over burden
- (b) Digging cuts on road works
- (c) Coal mining
- (d) All of the above

- (vi) A HOE is known by the following names *except*
- (a) Back hoe
 - (b) Push shovel
 - (c) Back shovel
 - (d) Crane
- (vii) The basic part(s) of a hoe is/are
- (a) Jack boom
 - (b) Bucket
 - (c) Stick
 - (d) All of the above
- (viii) Trenchers are used for digging in soils *except*
- (a) Loams
 - (b) Clays
 - (c) Rocks
 - (d) Loose soils
- (ix) Safety in construction is important due to
- (a) Humanitarian concerns
 - (b) Medical expenses
 - (c) Economic reasons
 - (d) All of the above
- (x) Major fire hazards at construction sites are due to
- (a) Welding and cutting operations
 - (b) Unsafe storage of materials
 - (c) Portable heating equipment
 - (d) Matches and smoking

- (xi) The largest employer sector in India is
- (a) Power sector
 - (b) Petro-chemical sector
 - (c) Automobile sector
 - (d) Agriculture sector
- (xii) Productivity is
- (a) $\frac{\text{Output}}{\text{Input}}$
 - (b) $\frac{\text{Input}}{\text{Output}}$
 - (c) $\text{Input} \times \text{Output}$
 - (d) None of the above
- (xiii) Scheduling helps in
- (a) Planning the project
 - (b) Financial control of the project
 - (c) Preparing estimate of the project
 - (d) Completing the project in an orderly and effective manner
- (xiv) The main disadvantage of bar chart is
- (a) Time schedule is not shown properly
 - (b) The financial aspect is not shown
 - (c) It does not show the independence of the activities
 - (d) Progress monitoring of the work is not possible

2. A construction machine costs Rs. 96,000 and has an expected life of 6 years and salvage value of Rs. 6,000. It is expected to work 2500 hours in a year. Compute the yearly depreciation for the machine using : 14
- (a) Straight line, and
- (b) Sum of the years' digit method.
3. (a) Explain the methods of clearing ground at the site of work.
- (b) What are the various costs considered in evaluating the economic life of an equipment ? 2x7=14
4. (a) Give comparative advantages and disadvantages of crawler mounted and wheel mounted bulldozers.
- (b) What are dozers ? For what purpose are they used ? Give their classification. 2x7=14
5. (a) What is the importance of safety in a construction project ? Discuss briefly. What safety measures should be taken during demolition work ?
- (b) Determine the quantity of material compacted if the sheep's foot roller travels at 6 km/hr, time of rolling is 50 minutes, length of drum 4.0 m, number of drums 2, fraction of overlap $\frac{1}{5}$, layer thickness 0.5 m and the number of passes given are 10. 2x7=14

6. Write short notes on any **four** of the following : $4 \times 3 \frac{1}{2} = 14$

- (a) Preventive Maintenance
- (b) Training of operators
- (c) Book value of the equipment
- (d) Derrick Crane
- (e) Aggregate cooling
- (f) Fork Lift truck