

May 2018

ADVANCED CONSTRUCTION TECHNIQUES & EQUIPMENTS

Time Allowed: 3 Hours

Full Marks: 70

Answer to Question No. 1 is compulsory and to be answered first.
This answer is to be made in separate loose script(s) provided for the purpose.
Maximum time allowed is 45 minutes, after which the loose answer scripts will be collected and fresh answer scripts for the answering the remaining part of the question will be provided.
On early submission of answer scripts of Question No. 1, a student will get the remaining script earlier.

Answer any five questions from the rest.

1. Answer the following questions (any twenty): 20×1
- i) Plywood is made by gluing together _____.
 - ii) Veneers are thin sheet of wood, 0.4 mm to 0.6 mm in thickness (True/False)
 - iii) _____ is an all-inclusive term that describes spraying concrete or mortar with either a dry or wet mix process.
 - iv) Maximum water cement ratio in tremi method is _____.
 - v) Green concrete increases the dead weight of a structure (True/False)
 - vi) Hoyer system is not suitable for pre-tensioned members. (True/False)
 - vii) The formwork from the beams excluding crops, can be removed only after _____ days.
 - viii) Pre-fabricated construction reduces energy consumption (True/False).
 - ix) Dumper are mainly _____ powered.
 - x) Length of conveyor belt about is _____ m.
 - xi) Vibratory roller uses dynamic forces (vibrations) only. (True/False)
 - xii) A scraper is combination of loader and is _____ machine.
 - xiii) Capacity of transit mixture is _____.
 - xiv) Preventing maintenances means that people waits until equipment fails and repair it. (True/False)
 - xv) specific gravity of bentonites solution is _____.
 - xvi) Loaders come with bucket capacity ranging from _____ cum. to is _____ cum.
 - xvii) Tower cranes are preferably used for structure above _____ m.
 - xviii) Dumpers are (hoisting/hulling) equipment.
 - xix) In pre fabricated construction, construction time is almost double than that of conventional cast in site construction. (True/False)
 - xx) To manufactured concrete sleeper, which of the following method is used? - a. Post tensioning b. Pre tensioning c. Partial pre tensioning d. None of this.
 - xxi) Full form of RPVC is _____.
 - xxii) Plywood- is made by gluing together _____.
 - xxiii) The two process of shortcrete are _____ and _____.
 - xxiv) Maximum w/c ratio in tremi method is _____.
 - xxv) What is the diameter of tend on used in prestressed concrete (5/7/8/10)mm.
2. a. What are the types (at least six) of plastics? State various uses of plastic as building materials (2+4+4)
 b. State the importance of plastics. (2½*4)
3. Write the short note on (any four). (2½*4)
- a. Pre-tensioning
 - b. Post-tensioning
 - c. Under water concrete
 - d. R.M.C
 - e. Shortcrete and guniting

4. Write the short note on (2*4)
- Steel formwork
 - H- frame
 - Belt conveyors
 - Uses of lifts
5. (4+2+4)
- What are the equipment used for transportation of concrete?
 - What do you mean by automatic concrete plant?
 - Discuss process and working principle of it.
6. (2+4+4)
- What are the types of pile driving equipment?
 - Discuss any two of them.
7. [2+(2*2)+(2*2)]
- Write down the names of some excavation equipment.
 - What is scraper? Name the types of scraper.
 - What is grader? State its use.
8. (1+3+3)
- What are the types of stone crusher?
 - Discuss any two of them.
9. (3+3+4)
- What is the used of scraper in construction? Discuss the working principle of scraper.
 - What are the types of vibrators?
10. (5+5)
- Draw a neat sketch of bulldozer.
 - Discuss of the usefulness of bulldozer in construction field.

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