



Name :
Roll No. :
Invigilator's Signature :

CS/M.Tech (CE)/SEM-1/CE-601/2012-13

2012

MATERIAL TECHNOLOGY

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

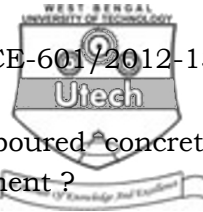
GROUP – A

(Short Answer Type Questions)

1. Answer any *twenty* question of the following : $20 \times 1 = 20$
- i) What is the proper mix ratio for vermiculite portland cement mixture that will be used to repair the shell of a swimming pool ?
 - ii) How many yards of concrete will cover 500 square feet at 4 inches thick ?
 - iii) What can be done when muriatic acid changes your driveway concrete a blotchy tan instead of the ivory white it once was ?
 - iv) Can you fix an asphalt pothole with concrete ?
 - v) Which is the least expensive way to add color to concrete – acid or staining or dying ?
 - vi) Can you cover asphalt with cement ?



- vii) Is there a demand for decorating concrete ?
- viii) Must a dome be built on a concrete slab or is it possible for a dome home to have a basement ?
- ix) What dose precast mean ?
- x) How do you cover brick with concrete ?
- xi) Should you keep concrete wet while curing ?
- xii) What do you mean by M20 concrete ?
- xiii) How many bags of concrete will you need for 30 ft 30ft 3in thick ?
- xiv) Is quick set cement okay for tile install ?
- xv) What is workability of cement ?
- xvi) How much water to 80LB bag of concrete ?
- xvii) What is the average cost of concrete per yard in Pittsburgh PA ?
- xviii) Does insurance cover a settling concrete foundation if there were multiple plumbing leaks under it in the past ?
- xix) How many yards of concrete will cover 20 x 20 ?
- xx) Can you use white distilled vinegar to etch concrete ?
- xxi) How do you install plumbing under a bathroom in a basement with a concrete floor ?
- xxii) Where can you find detailed information on how to build your own inground concrete swimming pool ?
- xxiii) What is difference between plasticizer and superplasticizer ?



- xxiv) What are the pros and cons of a poured concrete basement versus a treated wood basement ?
- xxv) How do you fix a spelling concrete retainer wall in a bedroom ?

GROUP – B

(Long Answer Type Questions)

Answer any *ten* of the following. $10 \times 5 = 50$

2. What is the difference between cement and concrete ?
 3. How is portland cement made ?
 4. What does it mean to “cure” concrete ?
 5. What is air-entrained concrete ?
 6. What are recommended mix proportions for good concrete ?
 7. Why does concrete crack ?
 8. What are the most common tests for fresh concrete ?
 9. Why do concrete surfaces flake and spall ?
 10. What does 28-day strength mean ?
 11. How do you control the strength of concrete ?
 12. How do you remove stains from concrete ?
 13. Is there a universal international specification for portland cement ?
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