Register Number:……..

KUMARAGURU
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GENERAL INSTRUCTIONS TO THE CANDIDATES

1. Candidates are instructed to answer the questions as per Bloom's Taxonomy knowledge level (K_1 to K_6)
2. Candidates are strictly instructed not to write anything in the question paper other than their roll number.
3. Candidates should search their pockets, desks and benches and handover to the Hall Superintendent/ Invigilator if any paper, book or note which they may find therein as soon as they enter the examination hall.
4. Candidates are not permitted to bring electronic watches with memory, laptop computers, personal systems, walkie-talkie sets, paging devices, mobile phones, cameras, recording systems or any other gadget / device /object that would be of unfair assistance to him / her.
5. Corrective measures as per KCT examination policies will be imposed for malpractice in the hall like copying from any papers, books or notes and attempting to elicit the answer from neighbours.

B.E DEGREE EXAMINATIONS: JUNE 2015

(Regulation 2014)

Second Semester

CIVIL ENGINEERING

U14CET201: Construction Materials

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Consider the following process. [K_2]

   1. Moulding 2. Burning 3. Preparation of clay 4. Cooling

   The correct sequence of manufacture of bricks is

   a) 1-2-3-4 b) 3-1-2-4

   c) 4-3-2-1 d) 2-1-3-4

2. For class I bricks, the water absorption after 24 hours immersion in cold water shall not be more than [K_2]

a) 22% by weight
b) 15% by weight
c) 10% by weight
d) 20% by weight

3. The initial setting time of ordinary Portland cement is [K_2]

a) Equal to 30 minutes
b) Not less than 30 minutes
c) Not more than 600 minutes
d) Not less than 600 minutes

4. Consider the following statements. [K_2]

1. The fineness as specific surface for ordinary Portland cement is not less than 225 m^2/kg.

2. The compound C_2S is responsible for corrosion resistance in concrete.

3. Kankar lime is hydraulic.

4. Bulking of sand will not affect the strength of concrete.

Which of these statements are correct?

a) 1,4
b) 2,3
c) 1,3
d) 2,4

5. The compacting factor test of cement concrete determines its [K_2]

a) Porosity
b) Strength
c) Compaction strength
d) Workability

6. Assertion (A): Curing of concrete can be done by steam under pressure. [K_2]

Reason (R): Steam curing reduces the shear strength and increases the speed of chemical reaction.

a) Both A and R are individually true and R is the correct explanation of A.
b) Both A and R are individually true but R is not the correct explanation of A.
c) A is true but R is false.
d) Both A and R are false.

7. How many days a timber may require for natural seasoning? [K_2]

a) 20 months
b) 1 year
c) 4 to 6 months
d) 2 years

8. Which of the following is not a defect in paints? [K_2]

a) Blistering
b) Stopping
c) Crocodiling
d) Foxiness

9. Which of the following is not used in the making of geosynthetics? [K_2]

a) Nylon
b) PVC
c) Polypropelene
d) Ceramics

10. Match list I wi th list II [K_2]

List I	List II
A. Tensile strength of glass	i. 35-350 kg/cm^2
B. Ceramic material	ii. Clay
C. Natural puzzolana	iii. Surkhi
D. Compressive strength of bricks	iv. 50 N/mm^2

	A	B	C	D
a)	i	ii	iii	iv
b)	iv	iii	ii	i
c)	i	iii	ii	iv
d)	iv	ii	iii	i

PART B (10 x 2 = 20 Marks)

(Answer not more than 40 words)

11. What are the main causes for deterioration of stones? [K_2]
12. Write the dimensions of actual and nominal bricks. [K_2]
13. What is slaking of lime? [K_2]
14. List the requirements of mortars. [K_2]
15. What is curing? What is its significance? [K_2]
16. What is high performance concrete? [K_2]
17. What is seasoning of timbers? [K_2]
18. Compare mild steel and HYSD bars. [K_2]
19. Write the applications of fibre textiles in construction. [K_2]
20. Write the classification of refractories on the basis of chemical behaviour. [K_2]

Answer any FIVE Questions:-

PART C (5 x 14 = 70 Marks)

(Answer not more than 300 words)

Q.No. 21 is Compulsory

21. (i) List the various physical tests done on stones. (4) [K_2]

    (ii) Explain the laboratory tests that are usually carried out to determine the quality of stones. (10) [K_3]

22.	(i)	Explain efflorescence test.	(4)	[K_2]
	(ii)	What are the advantages in using hollow concrete blocks instead of solid clay bricks in building construction?	(10)	[K_3]
23.		Explain the various physical and chemical tests carried out on cement with neat sketches.		[K_3]
24.		What are the tests to determine workability of concrete? Explain any two tests to determine workability of fresh concrete.		[K_3]
25.		What are the tets done on hardened concrete? Explain any three tests with neat sketches.		[K_3]
26.	(i)	List the applications of laminar composites.	(4)	[K_3]
	(ii)	Explain the manufacturing process of glass.	(10)	[K_2]

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