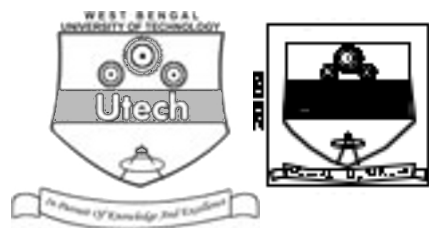


WHITEWARES – II (SEMESTER - 6)

CS/B.TECH (CT)/SEM-6/CT-603/09



1.
Signature of Invigilator

2.
Signature of the Officer-in-Charge

Reg. No.

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Roll No. of the
Candidate

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CS/B.TECH (CT)/SEM-6/CT-603/09
ENGINEERING & MANAGEMENT EXAMINATIONS, JUNE – 2009
WHITEWARES – II (SEMESTER - 6)

Time : 3 Hours]

[Full Marks : 70

INSTRUCTIONS TO THE CANDIDATES :

1. This Booklet is a Question-cum-Answer Booklet. The Booklet consists of **32 pages**. The questions of this concerned subject commence from Page No. 3.
2. a) In **Group – A**, Questions are of Multiple Choice type. You have to write the correct choice in the box provided **against each question**.
b) For **Groups – B & C** you have to answer the questions in the space provided marked 'Answer Sheet'. Questions of **Group – B** are Short answer type. Questions of **Group – C** are Long answer type. Write on both sides of the paper.
3. **Fill in your Roll No. in the box** provided as in your Admit Card before answering the questions.
4. Read the instructions given inside carefully before answering.
5. You should not forget to write the corresponding question numbers while answering.
6. Do not write your name or put any special mark in the booklet that may disclose your identity, which will render you liable to disqualification. Any candidate found copying will be subject to Disciplinary Action under the relevant rules.
7. **Use of Mobile Phone and Programmable Calculator is totally prohibited in the examination hall.**
8. You should return the booklet to the invigilator at the end of the examination and should not take any page of this booklet with you outside the examination hall, **which will lead to disqualification**.
9. Rough work, if necessary is to be done in this booklet only and cross it through.

No additional sheets are to be used and no loose paper will be provided

FOR OFFICE USE / EVALUATION ONLY

Marks Obtained

	Group – A								Group – B				Group – C				Total Marks	Examiner's Signature
Question Number																		
Marks Obtained																		

.....
Head-Examiner / Co-Ordinator / Scrutineer

6741 (09/06)



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**ENGINEERING & MANAGEMENT EXAMINATIONS, JUNE – 2009****WHITEWARES – II
SEMESTER – 6**

Time : 3 Hours]

[Full Marks : 70

GROUP – A**(Multiple Choice Type Questions)**

1. Choose the correct alternatives for the following :

10 × 1 = 10

i) Talc is added in tiles composition due to

- a) formation of low expansive phase
- b) better & smooth finishing
- c) to reduce drying shrinkage
- d) none of these.

ii) The mineralogical phase(s) present in the vitrified porcelain is/are

- a) quartz
- b) mullite
- c) mullite & some unconverted quartz
- d) none of these.

iii) Which of the following is low expansive phase ?

- a) Mullite
- b) Cordierite
- c) Crystoballite
- d) Alpha alumina.



iv) SiC should be fired in

- a) oxidizing atmosphere b) reducing atmosphere
c) air d) none of these.



v) To make working mould

- a) alpha plaster of paris is used
b) beta plaster of paris is used
c) gamma plaster of paris is used
d) all of these.

vi) Spring back action is related to

- a) powder preparation b) shaping
c) firing d) drying.

vii) Rate of drying can be increased during

- a) constant rate period b) falling rate period
c) above leather hard condition d) at leather hard condition.

viii) Reducing firing is done

- a) to increase viscosity of glassy phase
b) to decrease viscosity of glassy phase
c) to mature the body
d) both (b) & (c).

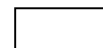
ix) Fracture toughness of a wear resistance whiteware body increases with

- a) hardness b) crack length
c) both (a) & (b) d) grain size.



x) Aspect ratio is related to

- a) sintering
- b) nucleation
- c) grain growth
- d) vitrification.



GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following questions.

3 × 5 = 15

2. What are the raw materials used for the manufacture of tiles in industry ? Give a descriptive flow chart for the manufacture of wall tiles in industry. 2 + 3
3. Compare the single fast fired wall tiles over double stage fired wall tiles in Indian scenario. 5
4. Write short note on wear resistance ceramics. 5
5. Write short note on spark plug insulators. 5

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following questions.

3 × 15 = 45

6. Process is set to manufacture wares made out of flocculated slip. One day, slip became deflocculated. Do you expect any problem in the drying process ? Explain. Same process is also set as Fresh : Return :: 40 : 60. By operator's mistake ratio is changed to 60 : 40. According to you, what problem may occur at the drying stage ? Discuss. If dunting defect is seen, which stage of firing is related to this defect ? What are the actions are needed to overcome this problem ? 5 + 5 + 5



7. Draw a firing curve showing draught control for a tunnel kiln. (under and above car) with a sketch of a tunnel kiln. What is the function of re-circulating fans ? Mark the position of air curtain fan and mention its function. How oxidizing and reducing atmosphere are separated from each other ? Suppose you are getting yellow core defect, what action should you take in this kiln ? Again, after sometime, there is a occurrence of black core defect, what will be your action to avoid recurrence of the defect ?

8 + 1 + 1 + 1 + 2 + 2

8. Write short notes on the following :

5 + 5 + 5

- a) Role of Wollastonite in manufacture of wall tiles
- b) Compare kiln furniture
- c) LTM-car.

9. Discuss the characteristics of superior quality of kiln furniture used in ceramic industry. Write the different technical names of kiln furniture. Compare and contrast the properties and uses of SiC based and cordierite based kiln furniture. Why Si_3N_4 bonded SiC or re-crystallised SiC give better performance than SiC ?

3 + 3 + 5 + 4

END