



**SIDDHARTH GROUP OF INSTITUTIONS :: PUTTUR**  
Siddharth Nagar, Narayanavanam Road – 517583

**QUESTION BANK (DESCRIPTIVE)**

**Subject with Code :Concrete Technology (13A01503)Course & Branch: B.Tech - CE Year & Sem:III-B.Tech & I-Sem Regulation: R13**

**UNIT –I**

**CEMENT, AGGREGATES AND ADMIXTURES**

1. What are Bouge's compounds? Explain in detail how each one of these compounds influences the strength and setting properties of cement. 10M
2. a. Explain heat of hydration and hydration process of cement in detail. 5M  
b. Explain setting time of cement and factors effecting setting time of cement. 5M
3. a. Discuss the chemical composition of ordinary Portland cement. 5M  
b. Briefly explain different types of cement. 5M
4. a. Explain the term super plasticizers. How are they useful in concrete production? 5M  
b. Explain the advantages of using plasticizers and super plasticizers in concrete making. 5M
5. a. Discuss the difference between the wet and dry process of manufacturing of Portland cement. 5M  
b. Draw the flow diagrams for wet and dry process of manufacture of cement and explain the same. 5M
6. Define the term "Bulking of aggregates". Explain its significance with reference to concrete making. Explain the simple field test to determine the bulking of aggregates. 5M
7. a. What do you mean by soundness of aggregate? 5M  
b. What is alkali-aggregate reaction? And how will it affect the concrete properties. 5M
8. a. Explain the significance of grading of aggregates with reference to concrete making. 4M  
b. How do you conduct sieve analysis on coarse aggregate in laboratory? 3M  
c. Differentiate between gap grading and well grading of aggregates. 3M
9. a. Bring out the detailed classification of aggregates and explain each one of them briefly 5M  
b. Explain different methods of measurement of moisture content of aggregates. 5M
10. a. What is the function of gypsum in the manufacture of cement? 2M  
b. What is the function of gypsum in the manufacture of cement? 2M  
c. What are pozzolonas? 2M  
d. What is known as clinker? 2M

e. Difference between quick setting and rapid hardening cement.

2M

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**Regulation:** R13

**UNIT – I**

1. For quality control of Portland cement, the test essentially done is [     ]  
A. setting time    B. Soundness    C. tensile strength    D. All the above
2. Lower the normal consistency value, [     ]  
A. Lower will be the strength of concrete    B. Medium will be the strength of concrete  
C. Higher will be the strength of concrete    D. None of the above
3. Under normal conditions using an ordinary cement, the period of removal of the form work, is: [     ]  
A. 7 days for beam soffits    B. 14 days for bottom slabs of spans 4.6 m and more  
C. 21 days for bottom beams over 6 m spans    D. All The Above
4. The mixture of different ingredients of cement, is burnt at [     ]  
A. 1000°C    B. 1200°C    C. 1400°C    D. 1900°C
5. Hydration of cement is due to chemical action of water with [     ]  
A. Tricalcium silicate and dicalcium silicate  
B. Dicalcium silicate and tricalcium aluminate  
C. Tricalcium aluminate and tetra calcium aluminoferrite    D. All the above.
6. The size of vicat needle, used to conduct setting of cement is [     ]  
A. 10mm Dia    B. 1mm Square    C. 3mm Square    D. 10 mm Dia
7. To obtain cement dry powder, lime stones and shales or their slurry, is burnt in a rotary kiln at a temperature between [     ]  
A. 1100° and 1200°C    B. 1200° and 1300°C    C. 1300° and 1400°C    D. 1400° and 1500°C
8. Workability improved by adding [     ]  
A. air-entraining agent    B. foaming agent    C. oily-agent    D. all the above
9. The commonly used material in the manufacture of cement is  
A. sand stone    B. Slate    C. lime stone    D. graphite.
10. Pick up the correct proportions of chemical ingredients of cement [     ]  
A. Lime: Silica: Alumina: Iron oxide: 63: 22: 6: 3  
B. Silica: Lime: Alumina: Iron oxide: 63: 22: 6: 3  
C. Alumina: Silica: Lime: Iron oxide: 63: 22: 6: 3  
D. Iron oxide: Alumina: Silica: Lime: 63: 22: 6: 3
11. The high strength of rapid hardening cement at early stage, is due to its [     ]  
A. finer grinding    B. burning at high temperature  
C. increased lime cement    D. higher content of tricalcium.

12. Vicat's apparatus is used for [ ]  
A. fineness test      B. consistency test      C. setting time test      D. B and C
13. The rock which is not calcareous, is: [ ]  
A. lime stone      B. Macl      C. Chalk      D. Laterite
14. For road pavements, the cement generally used, is [ ]  
A. ordinary Portland cement      B. rapid hardening cement  
C. low heat cement      D. blast furnace slag cement
15. Fine aggregates are the aggregates having the size less than: [ ]  
A. 5mm      B. 4.75mm      C. 3.50mm      D. 2mm
16. Choose the correct answer [ ]  
A. Cement color should not be greenish  
B. Smooth and gritty feeling when feel between the fingers  
C. The cement should not float when thrown in a bucket full of water  
D. None of the above
16. The resistance of an aggregate to compressive forces is known as [ ]  
A. Crushing strength      B. Impact value      C. Shear resistance      D. None of the above
17. For the improvement of workability of concrete, the shape of aggregate recommended is  
A. Angular      B. Round      C. Flaky      D. Irregular
18. Determination of Moisture Content of aggregate by [ ]  
A. Drying method      B. Displacement method  
C. Calcium Carbide method      D. All of the above.
19. Factors which promote alkali aggregate reaction are [ ]  
A. Reactive type of aggregate      B. High alkali content  
C. Availability of Moisture      D. All the above
20. In concrete the fine aggregates is used to [ ]  
A. Fill up the voids in cement      B. Fill up the voids in coarse aggregate  
C. Fill up the voids in sand      D. All the above
21. In Shape Test, the dimension of thickness gauge is calculated as [ ]  
A. 2.4 times the average of the size of retained and passing Sieve  
B. 1.2 times the average of the size of retained and passing Sieve  
C. 0.6 times the average of the size of retained and passing Sieve  
D. 1.8 times the average of the size of retained and passing Sieve
22. Concrete is strong in [ ]  
A. Compression      B. Tension      C. Buckling      D. Flexure
23. In an ordinary portland cement, the composition of lime is [ ]  
A. 50%      B. 63%      C. 21%      D. 33%
24. In concrete the material used as a fine aggregate is [ ]  
A. Cement      B. Sand      C. jelly      D. Gypsum
25. Shrinkage of concrete develops [ ]  
A. spalling in concrete      B. bends in concrete  
C. cracks in concrete      D. Voids in concrete
26. In concrete cube test, the standard size of cube is [ ]  
A. 15 cm x 15 cm x 15 cm      B. 10 cm x 10 cm x 10 cm  
C. 25 cm x 25 cm x 25 cm      D. None

27. Approximate percentage range of CaO in OPC is \_\_\_\_\_ [    ]  
A. 50-60      B. 17- 25      C. 60 -67      D. 3- 8
28. Approximate percentage range of Al<sub>2</sub>O<sub>3</sub> in OPC is \_\_\_\_\_ [    ]  
A. 17-25      B. 3-8      C. 3- 10      D. 4-15
29. Approximate percentage of SiO<sub>2</sub> in OPC is \_\_\_\_\_ [    ]  
A. 50-60      B. 17- 25      C. 60 -67      D. 3- 8
30. \_\_\_\_\_ number of grades available in OPC [    ]  
A. 1      B. 2      C. 3      D. None
31. Which compound is liberates higher heat \_\_\_\_\_ [    ]  
A. C<sub>3</sub>S      B. C<sub>2</sub>S      C. C<sub>3</sub>A      D. C<sub>4</sub>AF
32. Which compound is liberates lower heat \_\_\_\_\_ [    ]  
A. C<sub>3</sub>S      B. C<sub>2</sub>S      C. C<sub>3</sub>A      D. C<sub>4</sub>AF
33. In M20 concrete M refers to \_\_\_\_\_ [    ]  
A. Minimum      B. Maximum      C. Mix proportion      D. None
34. At an early age greater strength contribute compound is \_\_\_\_\_ [    ]  
A. C<sub>3</sub>S      B. C<sub>2</sub>S      C. C<sub>3</sub>A      D. C<sub>4</sub>AF
35. The role of gypsum in cement is \_\_\_\_\_ [    ]  
A. Accelerate setting process      B. Retard setting process      C. No affects      D. None
36. Least strength contributes compounds is \_\_\_\_\_ [    ]  
A. C<sub>3</sub>S      B. C<sub>2</sub>S      C. C<sub>3</sub>A      D. C<sub>4</sub>AF
37. The size of the coarse aggregate is more than \_\_\_\_\_ [    ]  
A. 1.16 mm      B. 2.36 mm      C. 4.75 mm      D. None
38. The minimum 28 days' compressive strength of 43 grade cement is \_\_\_\_\_ [    ]  
A. 23 MPa      B. 33 MPa      C. 40 MPa      D. 43 MPa
39. The easiness of handling concrete is known as \_\_\_\_\_ [    ]  
A. Workability      B. Consistency      C. Hardness      D. None
40. Device which is used to find out normal consistency of cement is \_\_\_\_\_ [    ]  
A. Le – Chatelier      B. Permeability apparatus      C. Vicat apparatus      D. None

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