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***** EXAMINATION *****

ROLLER-COMPACTED CONCRETE

1. **Roller-compacted concrete design objectives include:**

   a) quick placement
   b) minimum manpower
   c) minimal complex construction procedures.
   d) All of the above.

2. **Cost savings and more rapid construction are advantages of:**

   a) shotcrete
   b) roller-compacted concrete
   c) concrete formed in place
   d) gunite

3. **The use of pozzolan in roller-compacted concrete projects will:**

   a) reduce costs and lower heat generation.
   b) reduce costs and elimination of Portland cement
   c) slightly increase the cost of construction.
   d) None of the above.

4. **Pozzolan is also known as:**

   a) Portland lubricant
   b) mineral ash
   c) ground slag
   d) hydro-cement

5. **The roller-compacted concrete mixture is designed by:**

   a) the geotechnical engineer
   b) the materials engineer
   c) the structural engineer
   d) the hydraulic engineer

6. **The foundation conditions are evaluated by:**

   a) the geotechnical engineer
   b) the materials engineer
   c) the structural engineer
   d) the hydraulic engineer

7. **The requisite construction requirements are coordinated by:**

a) the geotechnical engineer
b) the materials engineer
c) the structural engineer
d) the hydraulic engineer

8. **The rate of hydration and strength development is affected by:**

a) the selection of cementitious materials
b) the selection of aggregates
c) the selection of vibration procedures
d) None of the above.

9. **The quality and economy of the concrete is affected by:**

a) the selection of construction equipment
b) the selection of design processes.
c) the selection of suitable sources of aggregates.
d) None of the above

10. **A larger aggregate can:**

a) be handled without segregation
b) be compacted
c) be used at a lower cost
d) All of the above.

11. **Admixtures can be used to:**

a) improve workability
b) speed up time of setting
c) decrease durability of the mixture.
d) eliminate certain design procedures.

12. **The fines content, type of fines, and water content of the mixture:**

a) influence the effectiveness of air-entraining admixtures.
b) influence the amount of heat generated during construction.
c) influence the height of the structure.
d) None of the above.

13. **The air content of roller-compacted concrete is measured by:**

a) a pressurometer
b) checking the specific gravity of the material.
c) the ASTM C 231 pressure method.
d) the external vibration.

14. **Roller-compacted concrete is different than conventional**

a) concrete because of workability level of the mixture
b) concrete because the design is easier
c) concrete because the placement procedure is always faster
d) concrete because the placement procedure uses less water

15. **For testing large sections of roller-compacted concrete:**

a) use full-size compaction equipment
b) use full-size spreading equipment
c) use full-size transporting equipment
d) All of the above.

16. **The maximum amount of pozzolan will minimize the:**

a) amount of aggregate
b) Portland cement content
c) water content
d) the admixture content

17. **The requirements of the properties of the mixture include:**

a) required/specified strength and age
b) expected exposure time and condition
c) cementitious materials limitations
d) All of the above.

18. **The sieve size of 50 mm is used for an aggregate blend of:**

a) 47 per cent
b) 62 per cent
c) 85 per cent
d) 97 per cent

19. **The specific gravity of fly ash is:**

a) 2.26
b) 72.1
c) 89
d) 702

20. **Important hardened roller-compacted concrete properties include:**

a) creep, permeability, volability
b) strain capacity, permeability, creep
c) elastic properties and conductivity
d) volume change and color change

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