Unit 13 - Week 11

Course outline

How does an NPTEL online course work?

Prerequisite Assignment

Week 1

Week 2

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Week 11

- Spectrocopy techniques - Part 4 Principle of NMR spectroscopy
- Porosity and pore structure - Intoduction, significance of pore distribution
- Porosity and pore structure - Woking of mercury intrusion porosimeter - Part 1
- Porosity and pore structure - Woking of mercury intrusion porosimeter - Part 2
- Lecture Materials
- Quiz : Assignment 11
- Characterization of Construction Materials : Week 11 Feedback Form

Week 12

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Assignment 11

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-04-15, 23:59 IST.

1) Which of these techniques can be used to measure the pore size distribution in cementitious materials: *1 point*

- [ ] Mercury intrusion porosimetry
- [ ] Laser diffraction
- [ ] Vapour condensation
- [ ] Small angle X-ray scattering

No, the answer is incorrect.
Score: 0

Accepted Answers:
Mercury intrusion porosimetry
Vapour condensation
Small angle X-ray scattering

2) The threshold pore size is indicated by. *1 point*

- ( ) A gradual rise in the intruded volume
- ( ) A sharp increase in the intruded volume
- ( ) A peak in the differential intruded volume curve
- ( ) A dip in the differential intruded volume curve

No, the answer is incorrect.
Score: 0

Accepted Answers:
A sharp increase in the intruded volume

3) The critical pore size is indicated by. *1 point*

- ( ) A gradual rise in the intruded volume
- ( ) A sharp increase in the intruded volume
- ( ) A peak in the differential intruded volume curve
- ( ) A dip in the differential intruded volume curve

No, the answer is incorrect.
Score: 0

Accepted Answers:
A peak in the differential intruded volume curve

4) Which of the following aggregate is having a fine pore structure, and why? *1 point*

- ( ) Cold bonded aggregate, chemical reaction
- ( ) Sintered aggregate, chemical reaction
- ( ) Cold bonded aggregate, high compaction
- ( ) Sintered aggregate, high compaction

No, the answer is incorrect.
Score: 0

Accepted Answers:
Cold bonded aggregate, chemical reaction

5) Which of these factors affect both porosity and permeability of concrete? *1 point*

- [ ] Water to cement ratio
- [ ] Use of mineral admixtures
- [ ] Use of granite aggregate
- [ ] Degree of curing.
- [ ] Type of cement

No, the answer is incorrect.
Score: 0

Accepted Answers:
Water to cement ratio
Use of mineral admixtures
Degree of curing.
Type of cement

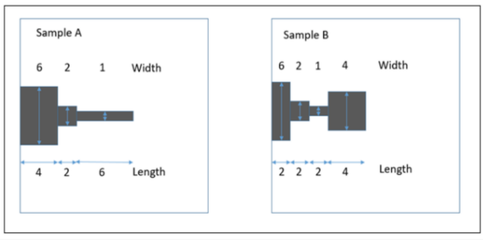
6) Which among the following suggest a higher degree of distortion or disintegration of microstructure of a material from an MIP test? *1 point*

- [ ] a right shift in the critical pore size to coarser sizes
- [ ] a sharp decrease in the threshold pore diameter
- [ ] widening and increase in the number of peaks in differential intrusion curve
- [ ] a dip in the differential intruded volume curve

No, the answer is incorrect.
Score: 0

Accepted Answers:
a right shift in the critical pore size to coarser sizes
widening and increase in the number of peaks in differential intrusion curve

Consider a hypothetical porous material having a cross section with porosity as shown by the coloured spaces. Answer the following questions when these two materials are subjected to testing in MIP.



7) The total inter connected porosity of sample A is:

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Numeric) 34

1 point

8) The total inter connected porosity of sample B is:

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Numeric) 34

1 point

9) The ink bottle effect is observed in: *1 point*

- ( ) Sample A
- ( ) Sample B
- ( ) Both the samples A and B
- ( ) None of the samples

No, the answer is incorrect.
Score: 0

Accepted Answers:
Sample B

10) The total area under the intrusion curve is greater in: *1 point*

- ( ) Sample A
- ( ) Sample B
- ( ) It's the same for both the samples

No, the answer is incorrect.
Score: 0

Accepted Answers:
Sample A