

Sample Questions for Paper 5 Building Materials and Technology

1. Which of the following paints are **most** suitable to be applied on galvanized steel?
- A. Aluminum paint as finishing coat and aluminum primer.
 - B. Lacquer as finishing coat on red lead primer.
 - C. Emulsion paint as finishing coat and prime lime as primer.
 - D. Synthetic paint as finishing coat and calcium plumbate as primer.

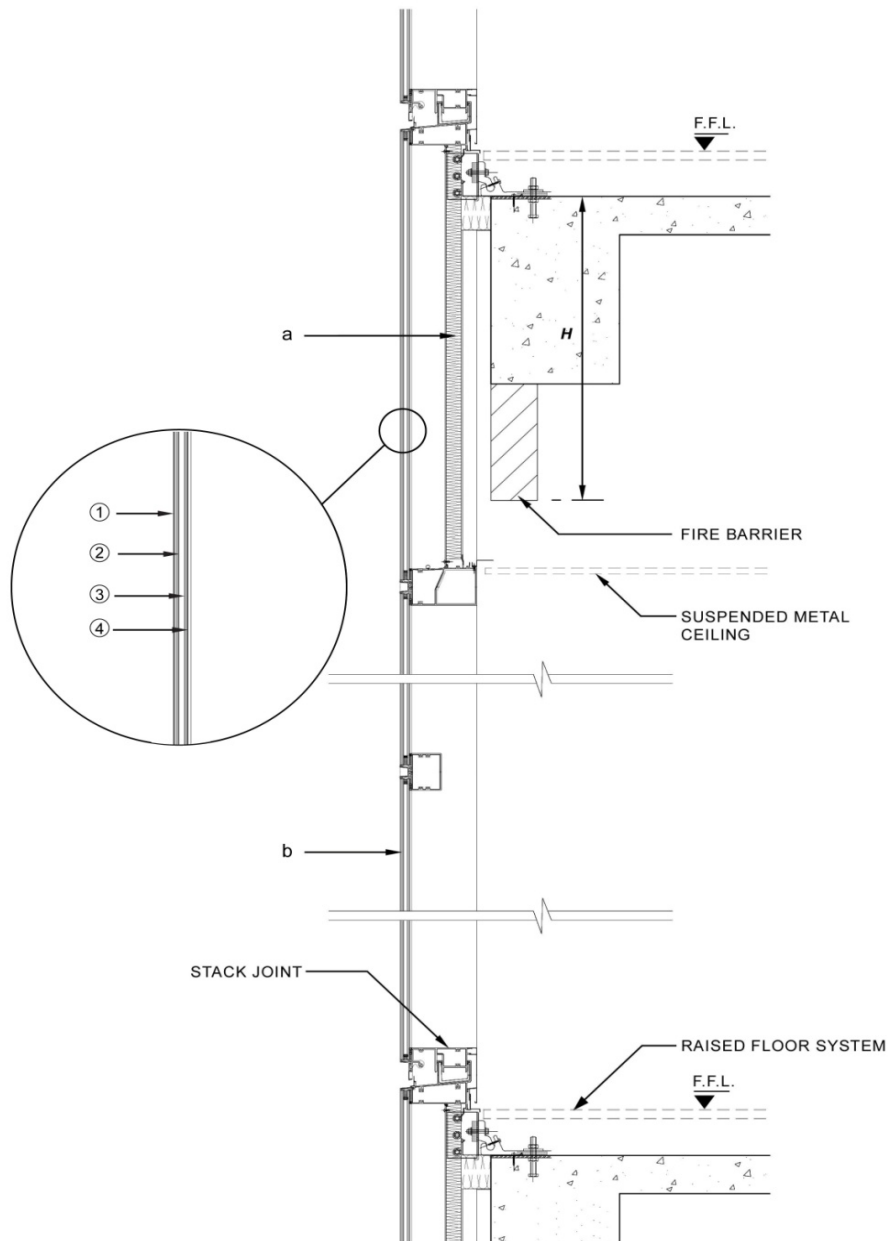
Ans. : D

2. To apply for consent from the Building Authority, the quality assurance scheme for Precast Concrete Construction should include
- A. test for chlorides in water.
 - B. frequency of audit by qualified quantity surveyor.
 - C. efficiency and proper operation of equipment at the casting yard.
 - D. calibration of laboratory equipment for measurement of quantities.

Ans. : C

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Answer questions 3 - 7 based on the following external wall section detail for a high-rise building.



3. What is the system for building enclosure as shown in the drawing?
- A. Window-wall system
 - B. Stick curtain-wall system
 - C. Unitized curtain-wall system
 - D. Suspended glass-wall system

Ans. : C

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4. What does the annotation “**a**” represent?

- A. Durasteel panel
- B. Thermal insulation
- C. Waterproofing board
- D. Metal honeycomb panel

Ans. : B

5. Which surface of the insulated glass unit is **most** suitable and effective for application of the low-e coating?

- A. 1
- B. 2
- C. 3
- D. 4

Ans. : B

6. In consideration of wind load and safety, what is the **most** appropriate glass type for the outer glass panel of the insulated glass unit annotated “**b**”?

- A. Float glass
- B. Acrylic glass
- C. Laminated glass
- D. Heat strengthened glass

Ans. : D

7. What is the minimum dimension annotated “H” for fire safety?

- A. 600mm
- B. 750mm
- C. 900mm
- D. 1100mm

Ans. : C

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8. Which of the following is **not** an advantage of prefabrication in construction?
- A. Quick assembling and installation on site.
 - B. Large amount of cost saving compared with in situ construction.
 - C. Suitable for mass production of standardized modules and components.
 - D. Better quality control can be achieved by means of factory prefabrication.

Ans. : B

9. Tolerance limits for construction are usually stated in the
- A. wall sections.
 - B. specifications.
 - C. bills of quantities.
 - D. production drawings.

Ans. : B

10. Which of the following is **not** an acceptable risk for demolition?
- A. Cutting up the concrete structural frame
 - B. Piling up heavy loads of debris on unused floors
 - C. Removal of building component containing asbestos
 - D. Keeping the existing trees on the pavement with the hoarding

Ans. : B

11. Which of the following is used to determine the consistency of fresh concrete?
- A. Slump test
 - B. Hammer test
 - C. Crushing test
 - D. Concrete test cubes

Ans : A

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12. Which of the following is **not** correct for tests on concrete core samples?
- A. The concrete cores should not show sign of segregation or honeycomb.
 - B. A minimum of one set of core samples should be taken every two floors.
 - C. A person independent from the contractor is required to supervise the drilling of core sample.
 - D. The diameter of concrete cores to be taken depends on the size of concrete aggregates.

Ans. : B

13. In the pattern or bond in brickwork, the **best** practical lap to the bricks
- A. is given by the Irish Bond.
 - B. is required for rake-out joints.
 - C. will cater for the tolerance of 20mm.
 - D. should not be less than a quarter of a brick length.

Ans. : D

14. Which of the following is commonly used as sealant for uPVC windows ?
- A. Silicone
 - B. Acrylics
 - C. Structural butyls
 - D. Oil-based caulking

Ans. : A

15. Which of the following provides a nearly undistorted vision?
- A. Float glass
 - B. Sheet glass
 - C. Wired glass
 - D. Tempered glass

Ans. : A

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16. Which of the following is **not** a testing method commonly applied to a curtain wall system?

- A. Air infiltration test
- B. Glass panel pull-out test
- C. Water infiltration test under dynamic pressure
- D. Safety test by means of cyclic test or static load test

Ans. : B

17. As a defect of plasterwork, efflorescence is

- A. inevitable due to the nature of the plaster.
- B. caused by water absorption in the background.
- C. due to relative movement between different plaster coats.
- D. caused by water transmitting the soluble salts from the background.

Ans. : D

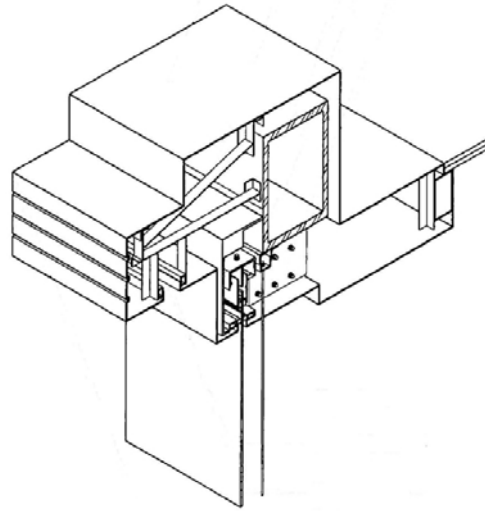
18. Which of the following does **not** require submission to the Buildings Department for approval?

- A. Glass shop front at ground floor with design span of 8m.
- B. Window wall system with a structural opening of 2m x 1.2m.
- C. Window at a location where the design wind pressure is greater than 2.86kPa.
- D. Stone cladding works at external walls of a ground floor with area 4m high x 6m long.

Ans. : D

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19. Which of the following is represented by the following isometric diagram?

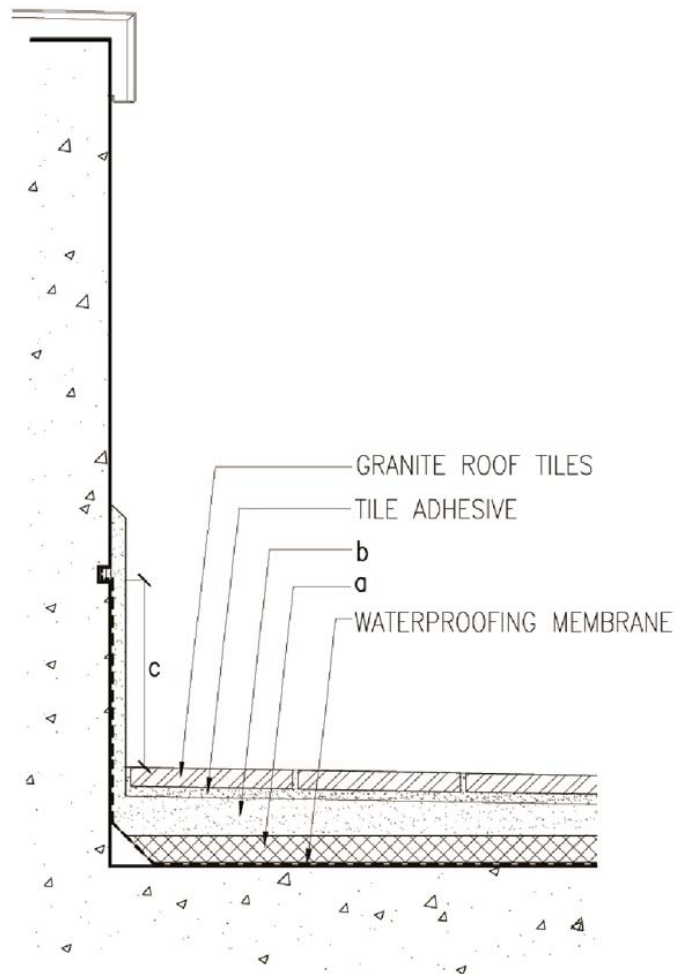


- A. Skylight
- B. Suspension glass details
- C. Environmental screen for windows
- D. Unitized glazing panels in curtain wall

Ans. : B

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Answer questions 20 to 22 by referring to the following typical roofing detail.



20. What does the annotation “a” represent?

- A. Rockwool
- B. Rigid insulation
- C. Metal honeycomb panel
- D. Marine grade plywood board

Ans. : B

21. What does the annotation “b” represent?

- A. Drainage layer
- B. Light weight concrete fill
- C. Cement lime screed laid to fall
- D. Cement sand screed laid to fall

Ans. : D

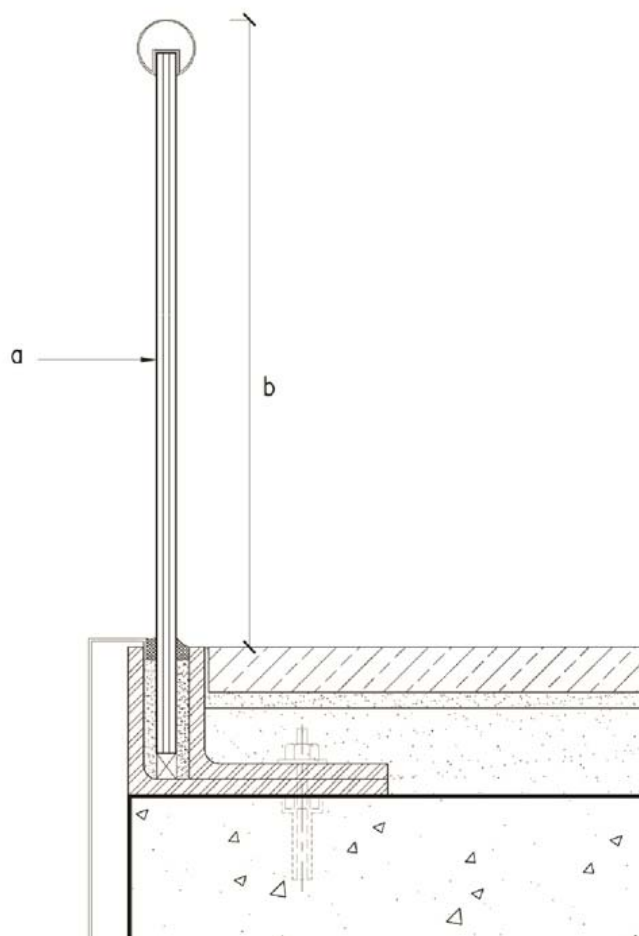
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22. What is the appropriate minimum dimension annotated “c”?

- A. 50mm
- B. 150mm
- C. 300mm
- D. 400mm

Ans. : B

Answer questions 23 to 25 by referring to the following free-standing glass protective barrier section detail.



23. Under the Building (Construction) Regulations, a protective barrier will be required where there is a difference in adjacent levels of greater than

- A. 450mm
- B. 600mm
- C. 900mm
- D. 1100mm

Ans. : B

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24. What is the suitable glass type for the glass panel annotated “a” for such protective barrier mentioned in Question 24?

- A. Float glass
- B. Wired glass
- C. Tempered glass
- D. Low iron float glass

Ans. : C

25. What is the minimum required height for the dimension annotated “b” for such protective barrier mentioned in question 24?

- A. 900mm
- B. 1000mm
- C. 1100mm
- D. 1200mm

Ans. : C

26. Arrange the following tasks in the **most** appropriate sequence for top-down construction of a 3-level basement.

- (1) Pile test
- (2) Construction of ground beam
- (3) Superstructure construction and top-down basement construction simultaneously
- (4) Construction of vertical structural members from pile cap to ground slab level
- (5) Construction of piles
- (6) Pile cap construction

- A. (3), (5), (4), (6), (1), (2)
- B. (5), (6), (1), (4), (3), (2)
- C. (5), (1), (6), (4), (2), (3)
- D. (3), (5), (6), (1), (4), (2)

Ans. : C

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27. Which of the following is a requirement for transformer room?
- A. The doors must face into an unobstructed space.
 - B. Location of transformer rooms must be at street level.
 - C. Fire resisting period requirement of the room may be exempted.
 - D. The doors of the room located above ground level when open outwards over a street should be at a height of not less than 3.5m.

Ans. : A

28. What aspects of works are better described by means of specifications than drawings?

- (1) Dimensions and shape
 - (2) Construction tolerances
 - (3) Quality and acceptance criteria
 - (4) Disposition and arrangement of components in a construction.
- A. (1) and (2) only
 - B. (1) and (4) only
 - C. (2) and (3) only
 - D. (3) and (4) only

Ans : C

29. Which of the following is **not** suitable for wet-fixed tiles on external walls?

- A. Tiles with good water absorption
- B. Tiles of size 300mm x 600mm fixed by mechanical means
- C. Joints not allowed to be greater than 3mm to avoid water penetration
- D. Spatterdash applied to substrate within 1 day after removal of formwork

Ans : C

Revised on 23 January 2015