Board Exam Desk

Architecture Reviewer

Architecture Licensure Examination | PRC | 120 original questions

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Original board-style practice questions with an answer key.

Practice questions

History and Theory of Architecture, Principles of Planning and Architectural Practice

1. Which Greek order typically has columns without a base, the shaft resting directly on the stylobate?

A. Ionic
B. Composite
C. Corinthian
D. Doric

2. Which pair of architects is credited with designing the Parthenon on the Athenian Acropolis?

A. Ictinus and Callicrates
B. Apollodorus and Rabirius
C. Mnesicles and Callimachus
D. Anthemius and Isidorus

3. A curved triangular segment of a sphere that lets a circular dome sit over a square bay is called a:

A. pendentive
B. squinch
C. drum
D. lantern

4. The slight outward swelling given to a classical column shaft to correct an optical illusion of thinness is:

A. annulet
B. fluting
C. entasis
D. abacus

5. In Gothic cathedrals, the main structural role of the flying buttress is to:

A. support the weight of the timber roof trusses
B. carry the outward thrust of the vaults to outer piers
C. carry rainwater away from the clerestory walls
D. brace the bell towers against strong winds

6. Which building, rebuilt under Abbot Suger in the 12th century, is generally considered the first Gothic church?

A. Chartres Cathedral
B. Abbey Church of Saint-Denis
C. Durham Cathedral
D. Cathedral of Notre-Dame de Paris

7. Who engineered the great octagonal dome of Florence Cathedral (Santa Maria del Fiore) without full centering?

A. Filippo Brunelleschi
B. Michelangelo Buonarroti
C. Donato Bramante
D. Leon Battista Alberti

8. The Renaissance treatise De re aedificatoria, modeled on Vitruvius, was written by:

A. Sebastiano Serlio
B. Leon Battista Alberti
C. Andrea Palladio
D. Giacomo da Vignola

9. San Carlo alle Quattro Fontane in Rome, known for its undulating facade and oval dome, is the work of:

A. Guarino Guarini
B. Gian Lorenzo Bernini
C. Francesco Borromini
D. Carlo Maderno

10. The Step Pyramid of Djoser at Saqqara, the earliest large cut-stone monument in Egypt, is credited to:

A. Senenmut
B. Imhotep
C. Ineni
D. Hemiunu

11. A stepped, terraced temple tower of mud brick with a shrine at its summit is characteristic of:

A. Egyptian mastabas
B. Egyptian pylons
C. Indian stupas
D. Mesopotamian ziggurats

12. In Japanese architecture, the ceremonial gateway that marks the entrance to a Shinto shrine is the:

A. torii
B. fusuma
C. tokonoma
D. engawa

13. In a mosque, the niche in the wall that shows the direction of Mecca (qibla) is the:

A. minaret
B. minbar
C. mihrab
D. iwan

14. Which house is the classic built demonstration of Le Corbusier's Five Points of a New Architecture?

A. Farnsworth House
B. Robie House
C. Villa Mairea
D. Villa Savoye

15. The aphorism 'less is more', linked to minimalist steel-and-glass modernism, is most associated with:

A. Walter Gropius
B. Adolf Loos
C. Ludwig Mies van der Rohe
D. Louis Kahn

16. The phrase 'form ever follows function' was coined by which pioneer of the tall office building?

A. William Le Baron Jenney
B. Daniel Burnham
C. Henry Hobson Richardson
D. Louis Sullivan

17. The Bauhaus school, founded in Weimar in 1919, was established under the direction of:

A. Johannes Itten
B. Hannes Meyer
C. Walter Gropius
D. Marcel Breuer

18. Fallingwater, the house cantilevered over a waterfall on Bear Run in Pennsylvania, was designed by:

A. Richard Neutra
B. Frank Lloyd Wright
C. Eero Saarinen
D. Rudolph Schindler

19. In the bahay na bato, the ground floor is usually of stone masonry while the upper living floor is mostly of:

A. bamboo, with woven walls
B. adobe, with fixed glass
C. wood, with sliding windows
D. brick, with steel louvers

20. The sliding window panels of the traditional bahay na bato used translucent panes made of:

A. mica sheet
B. capiz shell
C. thin alabaster
D. oiled paper

21. In the bahay na bato, the small openings below the windowsills, fitted with balusters and sliding panels, are the:

A. ventanillas
B. caidas
C. zaguanes
D. azoteas

22. The Art Deco Manila Metropolitan Theater, inaugurated in 1931, was designed by:

A. Andres Luna de San Pedro
B. Fernando Ocampo
C. Juan Arellano
D. Pablo Antonio

23. Which National Artist for Architecture is known for the Art Deco buildings of the Far Eastern University campus?

A. Pablo Antonio
B. Ildefonso Santos
C. Leandro Locsin
D. Juan Nakpil

24. The main building of the Cultural Center of the Philippines, with its massive cantilevered volume, was designed by:

A. Juan Nakpil
B. Pablo Antonio
C. Francisco Mañosa
D. Leandro Locsin

25. Which Intramuros church, part of the UNESCO-listed Baroque Churches of the Philippines, is the oldest existing stone church in the country?

A. Binondo Church
B. San Agustin Church
C. Quiapo Church
D. Manila Cathedral

26. Paoay Church in Ilocos Norte is a celebrated example of 'Earthquake Baroque', mainly recognized for its:

A. lightweight timber vaulted ceilings
B. tall unreinforced twin bell spires
C. massive buttresses along the side walls
D. slender prefabricated steel columns

27. In the traditional Ifugao house, the large wooden disks fitted around the posts mainly serve to:

A. keep rats from climbing into the house
B. tie the posts to the roof frame
C. hold drainage water off the posts
D. spread floor loads onto the soil

28. Vitruvius' triad of firmitas, utilitas and venustas is commonly rendered in English as:

A. firmness, commodity and delight
B. order, arrangement and symmetry
C. proportion, rhythm and scale
D. mass, space and surface

29. The golden ratio, often used as a proportioning system in design, has a value of about:

A. 1.732
B. 1.414
C. 1.500
D. 1.618

30. The saying 'less is a bore', a critique of orthodox modernism, came from:

A. Michael Graves
B. Charles Moore
C. Robert Venturi
D. Philip Johnson

31. Giambattista Nolli's 1748 map of Rome, showing public interiors as open space, is a classic illustration of:

A. axial symmetry in planning
B. hierarchical road layout
C. figure-ground relationships
D. radial concentric zoning

32. In design, the term 'human scale' refers to the size of a building or element judged in relation to:

A. the size of nearby buildings
B. the dimensions of the human body
C. the drawing scale used on the plans
D. the other parts of the same element

33. A line through space about which forms and spaces are arranged, symmetrically or not, is the ordering principle called:

A. rhythm
B. hierarchy
C. transformation
D. axis

34. A Pattern Language, which describes 253 linked design patterns from regions down to construction details, was written chiefly by:

A. Aldo Rossi
B. Kevin Lynch
C. Jane Jacobs
D. Christopher Alexander

35. 'Critical regionalism', which balances modern technique with local climate, topography and culture, was articulated by:

A. Reyner Banham
B. Bernard Tschumi
C. Kenneth Frampton
D. Charles Jencks

36. For a rectangular building in the hot-humid Philippine climate, solar heat gain is usually lowest when the:

A. long axis runs east-west
B. short facades face north
C. long axis runs north-south
D. longest walls face west

37. Warm indoor air rising and leaving through high openings while cooler air enters low openings is called:

A. stack effect
B. Venturi effect
C. heat island effect
D. Coanda effect

38. The early 20th-century plans for Manila and for the summer capital Baguio were prepared by:

A. Frederick Law Olmsted
B. Pierre L'Enfant
C. Daniel Burnham
D. Ebenezer Howard

39. In Kevin Lynch's The Image of the City, a strategic spot that people can enter, such as a major junction or square, is a:

A. node
B. edge
C. landmark
D. district

40. The Garden City concept, with self-contained towns ringed by agricultural greenbelts, was proposed by:

A. Patrick Geddes
B. Clarence Perry
C. Tony Garnier
D. Ebenezer Howard

41. Clarence Perry's neighborhood unit concept centers a residential district on:

A. a regional shopping mall on a highway
B. a central business district tower
C. an industrial estate with worker housing
D. an elementary school within walking distance

42. A 850 m² lot is zoned with a floor area ratio (FAR) of 3.2. What is the maximum gross floor area allowed?

A. 2,720 m²
B. 1,360 m²
C. 3,570 m²
D. 265.6 m²

43. A 1,250 m² lot allows a maximum building footprint of 65% of the lot area. What is the largest permitted footprint?

A. 1,062.5 m²
B. 812.5 m²
C. 750.0 m²
D. 437.5 m²

44. A 12-hectare residential area houses 3,600 people. What is its gross population density?

A. 30 persons per hectare
B. 600 persons per hectare
C. 300 persons per hectare
D. 432 persons per hectare

45. In a road hierarchy, the street type that gathers traffic from local streets and feeds it to arterials is the:

A. cul-de-sac
B. expressway
C. service alley
D. collector street

46. In the Philippines, the Comprehensive Land Use Plan (CLUP) of a city or municipality is put into effect mainly through:

A. a resolution of the homeowners association
B. a building permit issued by the Building Official
C. a zoning ordinance passed by the local council
D. a presidential proclamation for each barangay

47. Republic Act No. 9266, which regulates the practice of architecture in the Philippines, is known as:

A. The Architects' Practice Law of 1950
B. The Professional Regulation Act
C. The Architecture Act of 2004
D. The National Building Code

48. RA 9266 repealed which earlier law that had regulated the practice of architecture since 1950?

A. Presidential Decree No. 1096
B. Republic Act No. 545
C. Batas Pambansa Blg. 344
D. Republic Act No. 8981

49. Under RA 9266, the Professional Regulatory Board of Architecture is composed of:

A. a chairman and one member
B. a chairman and two members
C. a chairman and four members
D. a chairman and six members

50. The integrated and accredited professional organization of architects (IAPOA) recognized under RA 9266 is the:

A. Architects Guild of the Philippines
B. United Architects of the Philippines
C. Philippine Institute of Architects
D. Council of Architects of Manila

51. Under RA 9266, signed and sealed architectural drawings and specifications, whether or not the project is built, remain the property of:

A. the owner
B. the contractor
C. the architect
D. the Building Official

52. Presidential Decree No. 1096, the National Building Code of the Philippines, was issued in:

A. 1972
B. 2004
C. 1983
D. 1977

53. Under PD 1096, the local official who reviews plans, issues building permits and enforces the Code in a city or municipality is the:

A. City Engineer's Planning Officer
B. Zoning Administrator
C. Fire Marshal
D. Building Official

54. Under the occupancy classification of the National Building Code, school buildings fall under:

A. Group A
B. Group C
C. Group H
D. Group E

55. Batas Pambansa Blg. 344, which requires facilities for persons with disabilities in buildings, is commonly called the:

A. Accessibility Law
B. Green Building Law
C. Condominium Act
D. Urban Development Act

56. The Fire Code of the Philippines of 2008 (RA 9514) is administered and enforced mainly by the:

A. Office of Civil Defense
B. Philippine National Police
C. Bureau of Fire Protection
D. Department of Public Works and Highways

57. Presidential Decree No. 957 primarily protects buyers in which kind of real estate project?

A. agricultural land under reform
B. government infrastructure works
C. commercial office leases
D. subdivision lots and condominium units

58. Batas Pambansa Blg. 220 sets design standards for which type of development?

A. economic and socialized housing
B. high-rise commercial towers
C. resort and tourism facilities
D. industrial parks and estates

59. In a construction contract, a written order signed after award that changes the work, contract sum or time is a:

A. certificate of completion
B. change order
C. bid bulletin
D. notice to proceed

60. A fixed amount per day of delay, stated in the contract and paid by the contractor for late completion, is called:

A. retention money
B. mobilization fee
C. liquidated damages
D. performance bond

Structural Design, Building Materials, Construction Methods and Utilities

61. A simply supported beam with a span of 6 m carries a uniform load of 12 kN/m over its full length. What is the maximum bending moment?

A. 216.0 kN·m
B. 108.0 kN·m
C. 36.0 kN·m
D. 54.0 kN·m

62. A simply supported beam with a 5 m span carries a single 40 kN point load at midspan. What is the maximum bending moment?

A. 100.0 kN·m
B. 50.0 kN·m
C. 200.0 kN·m
D. 25.0 kN·m

63. A cantilever beam 3 m long carries a uniform load of 5 kN/m along its length. What is the bending moment at the fixed support?

A. 11.25 kN·m
B. 5.62 kN·m
C. 45.00 kN·m
D. 22.50 kN·m

64. A simply supported beam with an 8 m span carries a 60 kN point load 2 m from the left support. What is the left reaction?

A. 45.0 kN
B. 15.0 kN
C. 30.0 kN
D. 20.0 kN

65. A short 300 mm × 300 mm column carries an axial load of 900 kN. What is the average compressive stress?

A. 30.0 MPa
B. 10.0 MPa
C. 1.0 MPa
D. 3.3 MPa

66. A steel rod 2 m long with a cross-sectional area of 500 mm² carries a 50 kN tensile load. If E = 200 GPa, how much does it elongate?

A. 1.00 mm
B. 2.00 mm
C. 0.50 mm
D. 10.00 mm

67. What is the elastic section modulus of a solid rectangular beam 200 mm wide and 400 mm deep, about its strong axis?

A. 2.67 × 10■ mm³
B. 10.67 × 10■ mm³
C. 8.00 × 10■ mm³
D. 5.33 × 10■ mm³

68. What is the moment of inertia of a 150 mm × 300 mm rectangular section about its horizontal centroidal axis (depth 300 mm)?

A. 337.5 × 10■ mm■
B. 1350.0 × 10■ mm■
C. 112.5 × 10■ mm■
D. 84.4 × 10■ mm■

69. For a column with both ends fixed against rotation and translation, the theoretical effective length factor K is:

A. 1.0
B. 0.5
C. 2.0
D. 0.7

70. In an ideal truss with pinned joints and loads applied only at the joints, the members carry:

A. bending moment and shear only
B. torsion and axial force together
C. shear force only at midspan
D. axial tension or compression only

71. A reinforced concrete slab supported on all four edges behaves mainly as a one-way slab when its long-to-short span ratio is:

A. 2 or more
B. between 1.0 and 1.2
C. exactly 1.0
D. less than 1.5

72. In a simply supported reinforced concrete beam under gravity load, the main tension bars at midspan are placed:

A. near the top face
B. near the bottom face
C. at the neutral axis
D. along the side faces

73. The main purpose of concrete cover over reinforcing bars is to:

A. protect the steel from corrosion and fire
B. speed up the curing of the concrete
C. reduce the self-weight of the member
D. increase the beam's moment capacity

74. A storey that is much more flexible than the storeys above it, often from open parking or missing walls, is called a:

A. transfer storey
B. mezzanine storey
C. soft storey
D. basement storey

75. Seismic base isolation reduces earthquake forces on a building mainly by:

A. anchoring the structure deeper into rock
B. adding more reinforcement to the upper floors
C. making the foundation much stiffer and heavier
D. lengthening its natural period with flexible bearings

76. Which type of portland cement is specified when high early strength is needed, for example for early formwork removal?

A. Type V
B. Type III
C. Type I
D. Type II

77. Increasing the water-cement ratio of a concrete mix, with all else equal, generally:

A. reduces drying shrinkage
B. raises compressive strength
C. lowers workability
D. lowers strength and durability

78. The slump test performed on fresh concrete at the site is used to check its:

A. air content
B. setting time
C. consistency or workability
D. 28-day compressive strength

79. Specified compressive strength of structural concrete is normally based on tests of standard cylinders at an age of:

A. 3 days
B. 28 days
C. 7 days
D. 90 days

80. A concrete admixture used to delay setting, helpful in hot weather or long hauls, is a:

A. pozzolan
B. air-entraining agent
C. accelerator
D. retarder

81. Glass that breaks into small, blunt, granular pieces because of its surface compression is:

A. laminated glass
B. wired glass
C. annealed float glass
D. fully tempered glass

82. Laminated safety glass stays in place when broken mainly because of its:

A. embedded steel wire mesh
B. plastic interlayer bonding the plies
C. low-emissivity metallic coating
D. heat-strengthened surface layers

83. A low-emissivity (low-E) coating on window glass is used mainly to:

A. increase the strength of the glass
B. reduce radiant heat transfer through the glass
C. turn the glass opaque on demand
D. make the glass self-cleaning

84. Hot-dip galvanizing protects steel members from corrosion by coating them with:

A. copper
B. tin
C. chromium
D. zinc

85. A brick bond in which headers and stretchers alternate within every course is called:

A. stack bond
B. stretcher bond
C. English bond
D. Flemish bond

86. The main purpose of seasoning or kiln-drying timber before use is to:

A. increase its natural density
B. make the grain straighter
C. reduce moisture and limit shrinkage
D. make it insect-proof forever

87. Gypsum board performs well in fire-rated wall assemblies mainly because its core:

A. releases chemically bound water when heated
B. is impregnated with flame-proof resin
C. melts and seals gaps in the wall
D. reflects radiant heat like metal foil

88. A CHB wall 4.0 m long and 3.0 m high has a 1.5 m² window opening. Using 12.5 blocks per m², about how many 400 × 200 mm blocks are needed (no allowance for waste)?

A. 132 pieces
B. 150 pieces
C. 169 pieces
D. 105 pieces

89. How much concrete is needed for a slab 5 m × 4 m with a thickness of 125 mm?

A. 2.00 m³
B. 5.00 m³
C. 2.50 m³
D. 3.00 m³

90. How many board feet are in 10 pieces of 2" × 6" × 10' lumber?

A. 120 board feet
B. 100 board feet
C. 1,200 board feet
D. 50 board feet

91. A continuous reinforced concrete slab supporting all the columns of a building, used where soil bearing capacity is low, is a:

A. strap footing
B. isolated footing
C. mat foundation
D. strip footing

92. A pile that carries load mainly through skin resistance along its shaft, rather than at its tip, is a:

A. batter pile
B. sheet pile
C. friction pile
D. end-bearing pile

93. Grooves sawn or tooled into a concrete slab-on-grade to make shrinkage cracks form along straight lines are:

A. expansion joints
B. isolation joints
C. control joints
D. cold joints

94. A stair must climb a floor-to-floor height of 3.15 m with risers no higher than 175 mm. What is the minimum number of risers?

A. 18 risers
B. 16 risers
C. 19 risers
D. 17 risers

95. A straight stair has 18 risers and 17 treads, each tread 280 mm deep. What is its total horizontal run?

A. 4.48 m
B. 4.76 m
C. 2.38 m
D. 5.04 m

96. An accessible ramp at the maximum gradient of 1:12 must rise 0.60 m. What horizontal length does it need, excluding landings?

A. 4.80 m
B. 6.00 m
C. 7.20 m
D. 9.00 m

97. A roof rafter has a horizontal run of 4.0 m and a rise of 1.5 m. What is its sloping length, ignoring overhang?

A. 4.27 m
B. 3.71 m
C. 4.20 m
D. 5.50 m

98. A roof rises 1.2 m over a horizontal run of 4.0 m. What is its slope in percent?

A. 17%
B. 33%
C. 30%
D. 15%

99. On a plan drawn at a scale of 1:100, a wall measures 45 mm. What is its actual length?

A. 4.5 m
B. 45 m
C. 2.25 m
D. 0.45 m

100. A 6 m × 4 m floor is to be laid with 600 × 600 mm tiles. How many whole tiles must be ordered, before waste allowance?

A. 60 tiles
B. 40 tiles
C. 267 tiles
D. 67 tiles

101. A 90 m² wall area gets 2 coats of paint. If one gallon covers 30 m² per coat, how many gallons are needed?

A. 3 gallons
B. 6 gallons
C. 9 gallons
D. 12 gallons

102. The water seal in a plumbing fixture trap mainly serves to:

A. slow the flow of wastewater
B. keep sewer gases out of the building
C. filter solids from the drain
D. keep water pressure up in pipes

103. Vent pipes in a sanitary drainage system are provided mainly to:

A. equalize air pressure and protect trap seals
B. supply fresh water to the fixtures
C. store overflow from the septic tank
D. carry rainwater from the roof

104. The banging noise and pressure surge heard when a quick-closing valve suddenly stops water flow is called:

A. water hammer
B. back-siphonage
C. cavitation
D. air lock

105. In a septic tank, the settled solids are broken down mainly by:

A. chemical chlorination
B. ultraviolet disinfection
C. aerobic oxidation with blowers
D. anaerobic bacterial digestion

106. A rectangular water tank measures 2.0 m × 1.5 m × 1.2 m inside. What is its full capacity in liters?

A. 4,700 L
B. 4,320 L
C. 3,600 L
D. 360 L

107. What is the static water pressure at the bottom of a vertical pipe 30 m below the water surface? (ρ = 1,000 kg/m³, g = 9.81 m/s²)

A. 588.6 kPa
B. 29.43 kPa
C. 294.3 kPa
D. 30.0 kPa

108. A 2200 W resistive appliance runs on a 230 V single-phase supply. About how much current does it draw?

A. 17.30 A
B. 4.78 A
C. 10.45 A
D. 9.57 A

109. A 1.5 kW air-conditioner runs 8 hours a day for 30 days. How much energy does it use?

A. 180 kWh
B. 360 kWh
C. 1080 kWh
D. 84 kWh

110. A room's calculated cooling load is 24.6 kW. What is this in tons of refrigeration? (1 TR = 3.517 kW)

A. 7.0 TR
B. 2.1 TR
C. 8.7 TR
D. 9.8 TR

111. A 20 m² wall has an overall U-value of 2.5 W/m²·K. With an 8 K difference between indoor and outdoor air, what is the steady heat flow through it?

A. 400 W
B. 50 W
C. 800 W
D. 64 W

112. A wall assembly has thermal resistances in series of 0.12, 0.50 and 0.04 m²·K/W (including air films). What is its U-value?

A. 35.33 W/m²·K
B. 1.52 W/m²·K
C. 2.00 W/m²·K
D. 0.66 W/m²·K

113. Using Sabine's formula, what is the reverberation time of a 600 m³ hall with a total absorption of 80 m² sabins?

A. 0.21 s
B. 0.75 s
C. 2.42 s
D. 1.21 s

114. Two identical machines each produce 78 dB at a listener's position. What is the combined sound level when both run?

A. 88 dB
B. 81 dB
C. 84 dB
D. 156 dB

115. Under free-field conditions, doubling the distance from a point sound source lowers the sound pressure level by about:

A. 20 dB
B. 10 dB
C. 3 dB
D. 6 dB

116. The Sound Transmission Class (STC) of a wall or floor assembly is a single-number rating of its:

A. sound absorption at its surface
B. reverberation time in the room
C. impact noise from footsteps
D. airborne sound insulation

117. A total luminous flux of 12,000 lm falls evenly on a 30 m² work plane. What is the average illuminance?

A. 400 lux
B. 800 lux
C. 40 lux
D. 360 lux

118. An office of 60 m² needs 500 lux. Each luminaire gives 3,600 lm, CU = 0.6 and MF = 0.8. How many luminaires are needed by the lumen method?

A. 18 luminaires
B. 14 luminaires
C. 9 luminaires
D. 27 luminaires

119. To shade a west-facing window from low afternoon sun, the most effective fixed device is usually:

A. a clear glass canopy
B. vertical fins or louvers
C. a light shelf inside the window
D. a horizontal roof overhang

120. A ground-fault circuit interrupter (GFCI) is required in wet locations such as bathrooms mainly to:

A. prevent overload of the branch circuit
B. improve the power factor
C. protect people from electric shock
D. suppress voltage surges from lightning

Answer key

Architecture

1. D. Doric

The Greek Doric column rises straight from the stylobate with no base, unlike the Ionic and Corinthian orders.

2. A. Ictinus and Callicrates

The Parthenon (5th century BC) is attributed to Ictinus and Callicrates, with Phidias supervising the sculpture.

3. A. pendentive

Pendentives are spherical triangles that turn a square plan into a circular base; a squinch does the same job with an arch or corbelling across the corner.

4. C. entasis

Entasis is a subtle convex curve on the shaft that keeps a straight-sided column from looking pinched in the middle.

5. B. carry the outward thrust of the vaults to outer piers

Flying buttresses take the lateral thrust of the high ribbed vaults out to detached piers, which allowed thinner walls and larger windows.

6. B. Abbey Church of Saint-Denis

Suger's choir at Saint-Denis (c. 1140s) combined pointed arches, ribbed vaults and large windows, and is usually cited as the start of Gothic.

7. A. Filippo Brunelleschi

Brunelleschi built the double-shell dome with herringbone brickwork, avoiding the need for full timber centering.

8. B. Leon Battista Alberti

Alberti completed De re aedificatoria in the mid-15th century as the first major architectural treatise of the Renaissance.

9. C. Francesco Borromini

Borromini designed San Carlo alle Quattro Fontane, a key High Baroque building with complex geometry on a tiny site.

10. B. Imhotep

Imhotep, Djoser's chancellor, is credited with the Step Pyramid. Hemiunu is linked to the Great Pyramid and Senenmut to Hatshepsut's temple.

11. D. Mesopotamian ziggurats

Ziggurats of Sumer, Babylon and Assyria were stepped brick platforms that raised a temple toward the sky.

12. A. torii

The torii marks the passage into sacred shrine grounds. The tokonoma is an alcove, the engawa a veranda, and fusuma are sliding panels.

13. C. mihrab

The mihrab is the niche in the qibla wall. The minbar is the pulpit, the minaret the tower, and the iwan a vaulted hall open on one side.

14. D. Villa Savoye

Villa Savoye at Poissy (1931) shows pilotis, a free plan, a free facade, ribbon windows and a roof garden.

15. C. Ludwig Mies van der Rohe

Mies van der Rohe popularized 'less is more', the idea behind his reduced, carefully detailed buildings.

16. D. Louis Sullivan

Louis Sullivan wrote the phrase in his 1896 essay on the tall office building.

17. C. Walter Gropius

Gropius founded and first directed the Bauhaus; Hannes Meyer and then Mies van der Rohe followed him as director.

18. B. Frank Lloyd Wright

Frank Lloyd Wright designed Fallingwater (1936-39) for the Kaufmann family, with concrete terraces cantilevered over the falls.

19. C. wood, with sliding windows

The bahay na bato pairs a masonry ground floor with a lighter timber upper storey, which handles earthquakes better and lets air move through.

20. B. capiz shell

Flattened capiz (windowpane oyster) shells set in wooden grids let soft light through while cutting glare and heat.

21. A. ventanillas

Ventanillas bring in extra air at floor level. The azotea is a terrace, the caida an anteroom, and the zaguan the ground-floor entrance area.

22. C. Juan Arellano

Juan Arellano designed the Manila Metropolitan Theater, a major Philippine Art Deco landmark.

23. A. Pablo Antonio

Pablo Antonio designed FEU's Art Deco buildings in Manila and was named National Artist for Architecture.

24. D. Leandro Locsin

Leandro Locsin designed the CCP's Tanghalang Pambansa, known for its heavy floating form on a raised podium.

25. B. San Agustin Church

San Agustin Church (completed 1607) has survived earthquakes and wars, and it is one of the four churches in the UNESCO listing.

26. C. massive buttresses along the side walls

Huge buttresses brace Paoay's walls against seismic forces, the defining trait of Earthquake Baroque.

27. A. keep rats from climbing into the house

The rat guards stop rodents from climbing the posts to reach the stored rice and the living space above.

28. A. firmness, commodity and delight

Vitruvius held that good architecture must be structurally sound (firmitas), useful (utilitas) and beautiful (venustas).

29. D. 1.618

The golden ratio $\phi = (1 + \sqrt{5})/2 \approx 1.618$. The values 1.414 and 1.732 are $\sqrt{2}$ and $\sqrt{3}$.

30. C. Robert Venturi

Robert Venturi wrote it in Complexity and Contradiction in Architecture (1966), turning Mies' motto against itself.

31. C. figure-ground relationships

The Nolli map shows solid built mass against open public space, the basis of figure-ground analysis in urban design.

32. B. the dimensions of the human body

Human scale measures elements against our own bodies. Proportion compares parts with one another.

33. D. axis

An axis is a linear organizing device. Forms placed along or around it can be symmetrical or asymmetrical.

34. D. Christopher Alexander

Christopher Alexander and his colleagues published A Pattern Language in 1977.

35. C. Kenneth Frampton

Kenneth Frampton framed critical regionalism in essays of the early 1980s, building on Tzonis and Lefaivre.

36. A. long axis runs east-west

With the long axis east-west, the long walls face north and south, where overhangs shade them easily, and the hard-to-shade east and west walls stay small.

37. A. stack effect

Stack (chimney) ventilation is driven by temperature and density differences between indoor and outdoor air.

38. C. Daniel Burnham

Daniel Burnham, of the City Beautiful movement, prepared plans for Manila and Baguio in 1905.

39. A. node

Nodes are focal points people move into. Landmarks are reference points seen from outside, and edges are linear boundaries.

40. D. Ebenezer Howard

Ebenezer Howard set out the Garden City model in his 1898 book, later retitled Garden Cities of To-morrow.

41. D. an elementary school within walking distance

Perry sized the neighborhood unit to the population that supports one elementary school, with the school reachable on foot.

42. A. 2,720 m²

GFA = FAR × lot area = 3.2 × 850 = 2,720 m².

43. B. 812.5 m²

Footprint = 65% × 1,250 = 812.5 m².

44. C. 300 persons per hectare

Density = population ÷ area = 3,600 ÷ 12 = 300 persons/ha.

45. D. collector street

Collector streets link local access streets to the arterial network and handle both moderate through traffic and access.

46. C. a zoning ordinance passed by the local council

The CLUP is carried out through the zoning ordinance enacted by the Sangguniang Panlungsod or Sangguniang Bayan.

47. C. The Architecture Act of 2004

RA 9266, The Architecture Act of 2004, replaced the earlier law and governs licensure and practice of architects.

48. B. Republic Act No. 545

RA 545 of 1950 was the first Philippine architecture law and was repealed by RA 9266.

49. B. a chairman and two members

RA 9266 creates a three-person Board of Architecture: a chairman and two members.

50. B. United Architects of the Philippines

The United Architects of the Philippines (UAP) is the accredited integrated organization that all registered architects belong to.

51. C. the architect

The law treats plans and specifications as the architect's instruments of service, which remain the architect's property.

52. D. 1977

PD 1096 was promulgated in 1977 and is still the basic building law, with revised implementing rules issued since then.

53. D. Building Official

The Building Official administers and enforces PD 1096 at the local level, including issuing building and occupancy permits.

54. B. Group C

Group C covers education and recreation buildings such as schools. Group A is residential dwellings, Group E business and mercantile, Group H assembly.

55. A. Accessibility Law

BP 344 (1983) is the Accessibility Law. It requires ramps, accessible toilets, parking and other features in public buildings.

56. C. Bureau of Fire Protection

RA 9514 places enforcement of the Fire Code with the Bureau of Fire Protection under the DILG.

57. D. subdivision lots and condominium units

PD 957 is the Subdivision and Condominium Buyers' Protective Decree, which regulates developers and protects buyers.

58. A. economic and socialized housing

BP 220 sets minimum design standards for economic and socialized housing projects.

59. B. change order

A change order formally changes the scope, price or schedule of an awarded contract. A bid bulletin changes the bid documents before award.

60. C. liquidated damages

Liquidated damages are agreed in advance as compensation for each day of unexcused delay.

61. D. 54.0 kN·m

$M = wL^2/8 = 12(6)^2/8 = 54.0$ kN·m.

62. B. 50.0 kN·m

$M = PL/4 = 40(5)/4 = 50.0$ kN·m.

63. D. 22.50 kN·m

$M = wL^2/2 = 5(3)^2/2 = 22.50$ kN·m.

64. A. 45.0 kN

Taking moments about the right support: $R_L = P(L - a)/L = 60(6)/8 = 45.0$ kN.

65. B. 10.0 MPa

$\sigma = P/A = 900 \times 10^3$ N / (300×300) mm² = 10.0 MPa.

66. A. 1.00 mm

$\delta = PL/(AE) = (50 \times 10^3)(2000) / (500 \times 200000) = 1.00$ mm.

67. D. 5.33 × 10■ mm³

$S = bh^2/6 = 200(400)^2/6 = 5.33 \times 10$■ mm³.

68. A. 337.5 × 10■ mm■

$I = bh^3/12 = 150(300)^3/12 = 337.5 \times 10$■ mm■.

69. B. 0.5

Fixed-fixed gives K = 0.5. Fixed-pinned is about 0.7, pinned-pinned 1.0, and a fixed-free cantilever 2.0.

70. D. axial tension or compression only

With pinned joints and loads only at the joints, every truss member is a two-force member carrying pure axial force.

71. A. 2 or more

When $L/S \geq 2$, most of the load goes along the short span, so the slab is designed as one-way.

72. B. near the bottom face

Sagging moment puts the bottom fibers in tension, so the main bars go near the bottom, with the required concrete cover.

73. A. protect the steel from corrosion and fire

Cover protects bars from moisture, chlorides and heat, and also provides the bond needed to develop the bars.

74. C. soft storey

A soft storey concentrates lateral drift and damage during earthquakes, and is a common cause of collapse.

75. D. lengthening its natural period with flexible bearings

Isolation bearings shift the building's period away from the strong ground-motion range, so less force reaches the superstructure.

76. B. Type III

Type III cement gains strength quickly. Type I is general purpose, Type II moderate sulfate resistance, and Type V high sulfate resistance.

77. D. lowers strength and durability

Extra water leaves more capillary pores, so strength and durability drop even though the mix becomes more workable.

78. C. consistency or workability

Slump measures how much a cone of fresh concrete settles, which indicates its consistency.

79. B. 28 days

f'c is defined at 28 days. Seven-day results are only used as an early indicator.

80. D. retarder

Retarders slow hydration and extend setting time. Accelerators speed it up.

81. D. fully tempered glass

Tempering puts the surfaces in compression, so the glass shatters into small dice-like fragments instead of sharp shards.

82. B. plastic interlayer bonding the plies

A PVB or similar interlayer holds the broken glass fragments together in the frame.

83. B. reduce radiant heat transfer through the glass

Low-E coatings reflect long-wave infrared radiation, which cuts heat gain and loss while still letting visible light through.

84. D. zinc

Galvanizing applies a zinc coating that shields the steel and corrodes sacrificially in its place.

85. D. Flemish bond

Flemish bond alternates headers and stretchers in each course. English bond alternates whole courses of headers and stretchers.

86. C. reduce moisture and limit shrinkage

Drying timber close to its service moisture content reduces later shrinkage, warping and decay.

87. A. releases chemically bound water when heated

Gypsum is about 21% chemically bound water. Driving it off absorbs heat and slows the temperature rise behind the board.

88. A. 132 pieces

Net area = 12.0 – 1.5 = 10.5 m²; 10.5 × 12.5 = 131.25, so about 132 blocks.

89. C. 2.50 m³

V = 5 × 4 × 0.125 = 2.50 m³.

90. B. 100 board feet

Board feet = (t × w × L)/12 × pieces = (2×6×10)/12 × 10 = 100 bd ft.

91. C. mat foundation

A mat (raft) foundation spreads the building load over the whole footprint and so lowers the bearing pressure.

92. C. friction pile

Friction piles develop capacity through shaft friction with the surrounding soil. End-bearing piles rest on a firm stratum.

93. C. control joints

Control (contraction) joints create planned weak planes where shrinkage cracking occurs neatly.

94. A. 18 risers

Risers = 3150 ÷ 175 = 18.0, rounded up to 18 (each riser is 175 mm).

95. B. 4.76 m

Run = treads × tread depth = 17 × 280 mm = 4.76 m (there is always one tread fewer than risers).

96. C. 7.20 m

Length = rise × 12 = 0.6 × 12 = 7.20 m.

97. A. 4.27 m

L = √(run² + rise²) = √(4.0² + 1.5²) = 4.27 m.

98. C. 30%

Slope = rise/run × 100 = 1.2/4.0 × 100 = 30%.

99. A. 4.5 m

Actual = 45 mm × 100 = 4500 mm = 4.5 m.

100. D. 67 tiles

Tiles = 24 m² ÷ 0.36 m² = 66.67, rounded up to 67.

101. B. 6 gallons

Gallons = area × coats ÷ coverage = 90 × 2 ÷ 30 = 6.

102. B. keep sewer gases out of the building

The water held in the trap blocks sewer gases and vermin from coming back up through the fixture.

103. A. equalize air pressure and protect trap seals

Vents let air in and out of the drainage pipes so siphonage and back-pressure do not break the trap seals.

104. A. water hammer

Water hammer is a pressure surge from suddenly stopping flowing water. Air chambers or water hammer arresters absorb it.

105. D. anaerobic bacterial digestion

Sludge in a septic tank is digested by anaerobic bacteria. The effluent still needs a leaching field or further treatment.

106. C. 3,600 L

V = 2.0 × 1.5 × 1.2 = 3.6 m³ = 3,600 L (1 m³ = 1,000 L).

107. C. 294.3 kPa

p = ρgh = 1000 × 9.81 × 30 = 294,300 Pa ≈ 294.3 kPa.

108. D. 9.57 A

I = P/V = 2200/230 = 9.57 A.

109. B. 360 kWh

E = P × t = 1.5 kW × 8 h × 30 = 360 kWh.

110. A. 7.0 TR

TR = 24.6 ÷ 3.517 = 7.0 TR.

111. A. 400 W

Q = U × A × ΔT = 2.5 × 20 × 8 = 400 W.

112. B. 1.52 W/m²·K

R_total = 0.12 + 0.5 + 0.04 = 0.66; U = 1/R_total = 1.52 W/m²·K.

113. D. 1.21 s

RT = 0.161 V/A = 0.161 × 600 / 80 = 1.21 s.

114. B. 81 dB

L = 78 + 10 log■■(2) = 78 + 3 ≈ 81 dB.

115. D. 6 dB

By the inverse square law, ΔL = 20 log■■(2) ≈ 6 dB for each doubling of distance from a point source.

116. D. airborne sound insulation

STC rates how well an assembly blocks airborne sound. Impact insulation is rated by IIC, and absorption by NRC.

117. A. 400 lux

E = Φ/A = 12,000 / 30 = 400 lux.

118. A. 18 luminaires

N = EA/(Φ × CU × MF) = 500×60/(3600×0.6×0.8) = 17.36, rounded up to 18.

119. B. vertical fins or louvers

Low east and west sun gets under horizontal overhangs, so vertical fins or adjustable louvers work better on those facades.

120. C. protect people from electric shock

A GFCI trips when it detects current leaking to ground, cutting power before a dangerous shock can occur.

Topics to review

• Design programming and site analysis

• Building construction, materials and utilities

• Architectural history, theory and planning

• Building regulations and professional practice

Online question banks and study resources

Architecture - Pass Harbor (Question bank)

Official PRC board information

Current PRC exam programs

Independent study material prepared by Board Exam Desk.