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1. Based on the data sheet given below

Material Required	Cement:- Price 135 birr/bag & required cement amount 1.15 quintal/m ³ Sand :- Price 200 birr/m ³ & required sand amount 0.26 m ³ /m ³ Water:- Price 8.25 birr/ m ³ & required Water amount 0.15 m ³ /m ³ Stone:- Price 300 birr/ m ³ & required stone amount 1.25 m ³ /m ³
Labour Required	Engineer:- salary 8500 birr/ month & Utilization factor 10% Forman:- Salary 6000 birr/ month & Utilization factor 25% Mason:- Salary 200 birr/ day & Utilization factor 100% Labour: Salary 60 birr/ day & Utilization factor 100% A crew for the construction of masonry consisted of 1 Engineer, 1 Forman, 2 Masons and 6 daily Laborers. The hourly index for the labour is taken as 1.
Equipment Required	Tools: - Hourly rental cost 10birr/hr for each tools & 4 tools required for the work. The output of the crew and tools is 0.6 m ³ /hr
NB: - Assume 26 days per month and 8 hours per day as a working time. Use 12% for overhead cost and 18% for contractor profit	

What is the unit price of masonry construction before VAT?

- A. 1150.55 birr B. 1277.35 birr C. 1075.53 birr D. 1468.95 birr

2. From the following one is odd:

- a. Proprietary specification
- b. Random specification
- c. Performance specification
- d. Prescriptive specification

3. Which one of the following is true about specifications:

- a. Determines the progress of construction works
- b. Gives detail information of the contract type of the projects.
- c. Labor resources also included in the construction specification
- d. All

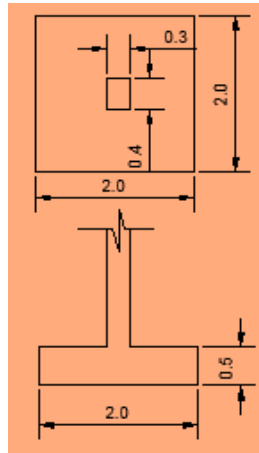
4. Which one the following entails true about Architect and Engineer?

- a. Building construction is primarily of an architect
- b. Engineering and industrial construction more often is for engineer.
- c. Owning drawings and specifications and reuse is matter of the A/E
- d. All



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5. Calculate the quantity of formwork for footing pad using the drawing below? Assume all lengths are in meter.



- A. 3.45 m^2
B. 6.21 m^2
C. 4.05 m^2
D. 8.10 m^2
6. Considering the above drawing, calculate the quantity for concrete work of footing pad? Assume 20 member of the footing is in the project.
- A. 20 m^3
B. 40 m^3
C. 28 m^3
D. 48 m^3
7. Referring to the drawing in question 5. Calculate quantity of concrete for footing column? Consider the column length is 2.5 m and 20 member of footing is in the project.
- A. 6 m^3
B. 4 m^3
C. 8 m^3
D. 10 m^3
8. Which of the following constituent in earth gives plasticity to mould bricks in suitable shape?
- (a) Silica (b) Lime (c) Alumina (d) Magnesia



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9. The correct sequence in the manufacturing of the bricks, is
(a) Weathering, Moulding, Tempering (b) Moulding, Tempering, Weathering
(c) Weathering, Tempering, Moulding (d) Tempering, Moulding, Weathering
10. Which of the following pairs is correctly matched?
(a) Sandstone- Igneous rock
(b) Limestone -Sedimentary rock
(c) Basalt -Metamorphic rock
(d) Granite –Argillaceous rock
11. The most suitable stone for building piers is
(a) Granite (b) limestone
(c) Sand stone (d) marble
12. Consider the following statements:
Higher water cement ratio in concrete results in
1. Stronger mix
2. Better workable mix
3. A weak mix
4. Less bleeding
Of these statements
(a) 1 and 2 are correct (b) 2 and 3 are correct (c) 3 and 4 are correct (d) 1 and 4 are correct
13. To produce low heat cements, it is necessary to reduce the compound
(a) C3S (b) C2S (c) C3A (d) C4AF
14. The correct sequence in increasing order of oxides percentage in an ordinary Portland cement is
(a) CaO, Al₂O₃, SiO₂ (b) Al₂O₃, SiO₂, CaO
(c) SiO₂, Al₂O₃, CaO (d) Al₂O₃, CaO, SiO₂



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15. Which of the following is not true with regards to replacement of cement partly by puzzolana in making concrete?

- (a) Impermeable concrete at later ages
- (b) More resistance to sulphate attack
- (c) Reduction in bleeding and segregation
- (d) Reduction in setting time.

16. Consider the following statements:

High early strength of cement is obtained as a result of

- 1. Fine grinding
- 2. Decreasing the lime content
- 3. Burning at higher temperatures
- 4. Increasing the quantity of gypsum

Of these statements

- (a) 1 and 2 are correct (b) 1 and 3 are correct
- (c) 2, 3 and 4 are correct (d) 1, 3 and 4 are correct

17. For high strength concrete the best aggregate is

- (a) Rounded (b) Irregular (c) Angular (d) All-in-aggregate

18. Consider the following statements:

The effect of air entrainment in concrete is to

- 1. Increase resistance to freezing and thawing
- 2. Improve workability
- 3. Decrease strength

Which of these statements are correct?

- (a) 1 and 2 (b) 1 and 3 (c) 1 alone (d) 1, 2 and 3



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19. The financial manager analyzes that ABC Consultant Company has an Intermediate-term of finance categories. An auditor wants to audit the budget allocated for the company in three years of time basis. Which of the following elements not taken as the check-list for an auditor.
- A. Lease
 - B. Insurance company
 - C. Revolving profit Agreement
 - D. Pensions fund
20. is the assessment of the firm's past, present and future financial conditions.
- A. Financial performance
 - B. Financial Capital Pool
 - C. Financial management
 - D. Financial Analysis
21. You are assigned as financial manager of JEZ Company. Your Boss orders you to choose the best NPV from the cash flow stream of company **A** and company **B**. The rate of return for Company A -12% and company B-10%. So that, which one of the company does you prefer in NPV.

Company A			Company B		
Year	Benefit in birr	Cost in birr	Year	Benefit in birr	Cost in birr
0	-	1000,000	0	-	900,000
1	50,000	-	1	250,000	-
2	100,000	-	2	200,000	-
3	400,000	-	3	300,000	-
4	600,000	-	4	200,000	-
5	400,000	-	5	250,000	-

- A. Company B
- B. Company A
- C. Both
- D. Un-preferable



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22. Which of the following is not taken as liquidity function of financial management for one CEO?
- A. Forecasting cash flow
 - B. Raising funds
 - C. Managing the flow of internal funds
 - D. Forecasting profit
23. The three reasons of Time Value of Money are what.
- A. Money, time and quality
 - B. Liquidity, risk and inflation
 - C. Cost, time and scope
 - D. Time , profit and loss
24.is the process of assembling different materials to form a building based on the its design.
- A. Construction material
 - B. Building construction
 - C. Bridge construction
 - D. Tunnel construction
25. Applied Loads and environmental forces acting on a building.
- A. Heat and cold
 - B. Seismic loads
 - C. Contraction of material
 - D. All
26. Factors affecting selection of appropriate structural system or combination of systems for a building.
- A. Un estimated cost
 - B. Function of the building
 - C. Organizational structure
 - D. Labor relation
27. The necessity of RCC framed structures is due to
- A. Ductility strength
 - B. High stiffness
 - C. High strength to weight ratio
 - D. Ability to be cast
28. The vertical load bearing members of the structural frame which transmits the beam loads down to the foundation.
- A. Footing
 - B. Grade beam
 - C. Column
 - D. Wall



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29. Identify the wrong statement about steel framed structures.
- A. Large displacement before collapse
 - B. Ability to deform plastically without damage
 - C. High tensile and low compressive strength
 - D. Can be easily welded, forged and riveted
30. The drawbacks of concrete structure
- A. Resistance to cracking
 - B. Volume instability
 - C. Good strength to weight ratio
 - D. Compressive strength
31. A material which is equally strong both in tension and compression
- A. Concrete
 - B. Timber
 - C. Steel
 - D. Fiber
32. The basic connectors used in making structural steel connections in building construction.
- A. Bolt
 - B. Weld
 - C. Rivet
 - D. Pin
 - E. All
33. The following are not true about prefabrication.
- A. Integration of different stages of production
 - B. Standardization
 - C. High degree of organization of work
 - D. Mechanization to replace manual labour
 - E. None
34. Which of the following are not found in precast concrete structure connections.
- A. Strut
 - B. Dowel bar
 - C. Inverted tee bar bracket
 - D. Cast in fixing plate
35. Structural curved skin covering a given plan shape and area where the forces in the shell or membrane are compressive and in the restraining edge beams are tensile.
- A. Dome structures
 - B. Hyperbolic parabolic Structures
 - C. Plain structures
 - D. All are answers
36. Double curvature shells
- A. Virtually any openings are impossible
 - B. Completely none span free
 - C. Excellent for auditoriums
 - D. Low ratio of thickness to span



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37. The purpose of foundation
- A. Lateral instability
 - B. Increase load intensity
 - C. Uneven distribution of load
 - D. Safety against scouring
38. Differentiate the right statement.
- A. Floor tolerate percolation of moisture
 - B. Foundation eliminates load intensity
 - C. Wall supports roof structures
 - D. Escalators are stationary stairs
39.Serves as a connecting link b/n the various internal portions of a building.
- A. Door frame
 - B. Sash window
 - C. Door
 - D. Shutter
40. The functional requirements of a wall are:
- A. Skid resistance
 - B. Passage of heat
 - C. Passage of sound
 - D. Stability under seismic wave
41. Staircase that moves by using different kinds of electrical or hydraulic driving force is
- A. Conveyor
 - B. Elevator
 - C. Forklift
 - D. Ramp
42. A structural component, which supports the floor covering.
- A. Sub-floor
 - B. Flooring
 - C. DPC
 - D. Soffit of the floor
43. A building foundation
- A. Directly transmit a point load to the bearing strata
 - B. Anchors the super imposed structure of the building
 - C. Convey lateral instability to the superstructure.
 - D. Can be located beside high traffic loads
44. Floor contain insulation, DPC, RCC and flooring.
- A. Basement
 - B. Terrace
 - C. Verandah
 - D. Suspended
45. Defined as the upper most part of the building, provided as a structural covering, to protect the building from weather.
- A. Corrugated metal sheet
 - B. Roof structure
 - C. Roof truss
 - D. Pitch of a roof



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46. Sheeting which is erected to contain the wet concrete.
- A. False-work
 - B. Scaffolding
 - C. Shooter
 - D. Formwork
47. What should be kept in mind while locating doors and windows in a building?
- A. Size and numbers in a room
 - B. Functional requirements of a room
 - C. Good ventilation within the building
 - D. Direction of window to door
 - E. All can be the answer
48. Is the horizontal distance b/n the nosing or front edges of two consecutive steps.
- A. Tread
 - B. Raiser
 - C. Step
 - D. Going
49. Which of the following is true about partition wall?
- A. An internal ceiling
 - B. Load bearing
 - C. Do not need good finish
 - D. Impact resistant
50. A floor consisting of rigid concrete bed, geotextile membrane, insulated screed and good surface finish.
- A. Wood floor
 - B. Asphalt floor
 - C. Solid floor
 - D. Suspended floor
51. Identify a type of shallow foundation.
- A. Caisson foundation
 - B. Wall foundation
 - C. Well foundation
 - D. Pier foundation
52. Are tapering steps which are provided for changing the direction of stair.
- A. Landings
 - B. Run
 - C. Flights
 - D. Winders
53. What is the vertical outside member of the shutter of the door or window.
- A. Frame
 - B. Head
 - C. Style
 - D. Top rail



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54. The basic requirements of a good formwork.
- A. Strong enough to sustain all loads
 - B. Efficiently propped
 - C. Tight joints against leakage
 - D. As light as possible
 - E. All are correct
55. Pitched roofs
- A. Satisfactorily cover those buildings with limited width and simple shape
 - B. Are mostly suitable for Africa
 - C. Equally applicable to any building
 - D. Suitable for buildings in plains or in hot regions
56. The horizontal projections of the head and sill of a frame to facilitate the fixing of the frame on wall opening.
- A. Shutter
 - B. Horn
 - C. Sill
 - D. Panel
57. Which of the following is not a spread foundation?
- A. Grillage foundation
 - B. Isolated footing
 - C. Strip footing
 - D. Well foundation
58. The vertical member of a frame, which is employed to sub- divide a window or a door vertically.
- A. Transom
 - B. Style
 - C. Hold fasts
 - D. Mullion
59. Materials used for building wall construction highly dependent on
- A. Non-climatic condition
 - B. Function of the wall
 - C. Unskilled labour availability
 - D. Impact unsupported
60. A roof with slopes in two directions and intersect at the center of the span and will have common drainage system.
- A. Hip roof
 - B. Gable Roof
 - C. Pyramid roof
 - D. Butterfly roof



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61. Identify the correct Standard Doors of residential building
- A. Bath room & WC 0.7-0.8m width and 2-2.1m height
 - B. Garages for cars 2.25-2.4m width and 2-2.25m height
 - C. External door: 0.9-1.2m width and 2-2.1m height
 - D. Internal door: 0.8-0.9m width and 2-2.1m height
 - E. All
62. According to their physical nature external building wall can be
- A. Non-load bearing wall
 - B. Composite wall
 - C. Basement wall
 - D. Foundation wall
63. Choose one stair that is different in category
- A. Newel Stair
 - B. Well Stair
 - C. Straight Stair
 - D. Geometrical Stair
64. When do you think Suspended floor is needed rather than a ground bearing slab?
- A. Soil with high bearing capacity,
 - B. In non-sloping sites,
 - C. Soils containing aggressive chemicals
 - D. Sites with Low water levels
 - E. All
65. The strength and properties of walls made up of Stone, Brick and HCB block depends on
- A. Method of bonding used
 - B. Quality of binding material
 - C. The masonry material quality
 - D. All
66. Which statement is incorrect about Flat slab flooring?
- A. Casted without any provision of beams
 - B. Transfers the load directly to the supporting columns
 - C. Used in case of large span and heavy loads.
 - D. All
67. The following is used in Steel door frames construction
- A. Channel sections formed from pressing steel plates
 - B. Single angle iron
 - C. T-sections
 - D. Double angle iron



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- E. All
68. Which of the following is the correct process of brick production?
- A. Excavation and storage – Tempering – Dryer chamber – Firing in kiln – Crack control
 - B. Clay preparation – Mixing – Sun dry – Firing in kiln – Sintering – Moulding
 - C. Grinding and blending – Moulding – Sun drying – Firing in kiln – Sintering
 - D. All
69. Couple-close roofs
- A. Have collars fixed to sides of rafters
 - B. Can be used for maximum span of 4.5m
 - C. The legs of the common rafters are tied with a tie beam
 - D. All
70. When does raft foundation necessary in building construction?
- A. The allowable soil pressure is moderate,
 - B. The building loads are light,
 - C. The use of spread footings exceeds half of the area,
 - D. The soil with Incompressible lenses,
 - E. None
71. One of the following is the correct statement in formwork construction
- A. Shuttering – Camber and cleaning – Propping and centering – Surface treatment
 - B. Centering and Propping – Surface treatment – Camber and cleaning - Shuttering
 - C. Propping and centering – Shuttering – Camber and cleaning – Surface treatment
 - D. Camber and cleaning – Shuttering – Propping and cleaning – Surface treatment
72. Incircle the different door categorized by the manner of construction
- A. Flush door
 - B. Sliding door
 - C. Swing door
 - D. Battened and ledged door
73. Identify the component not be found in double rafter roof.
- A. Strut and hanger
 - B. Flattened rafter
 - C. Inclined collar
 - D. 30° sloped wall plate



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74. Horizontal member of a frame, which is employed to subdivide a window opening horizontally.
- A. Lock rail
B. Horn
C. Frame
D. Transom
75. A door usually provided in public buildings such as museums, libraries, hotels, banks, etc. where there are constant visitors.
- A. Collapsible door
B. Sash door
C. Folding door
D. Revolving door
76. Windows are generally used for latrines and bath rooms of residential and public buildings.
- A. Sliding window
B. Louvered window
C. Swing window
D. Rolling window
77. Which of the following type of construction correctly matched with the level of equipment usage
- A. industrial construction -moderately use
B. high-way construction- intensively use
C. commercial buildings- lightly use
D. residential buildings- highly use
78. Which one of the following is differ from others
- A. Fuel consumption cost
B. repairs and maintenances cost
C. insurance cost
D. special item cost
79. Which factors are affecting the cost of owning and operating
- A. number of hours not used per year
B. the cost of the equipment delivered to the owner
C. number of years it is used
D. b and c



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80. Assume that you are assigned as a project manager of one leading construction company and have got soil investigation report as “hard rock”, So which construction equipment’s do you prefer to excavate as an expert according to the principle of soil investigation factor?
A. Dragline B. dozer C. splitter D. clamsheel
81. Which one of the following is correct about back hoe
A. Cable controlled & it makes outward strokes while digging.
B. can dig and dump over larger distances than another shovel can do
C. dragging softer material and above its track level
D. A shovel family construction equipment digging below machine level like trenches, footings, basements.
82. What are the advantages of construction equipment rent as compared to purchasing
A. avoid major repair costs and expenses
B. save time and effort when seeking out equipment
C. is greater for emergency
D. all
83. Which one of the following is true about equipment ownership cost
A. are variable costs that are incurred each year
B. are the costs incurred only when the equipment is used
C. are fixed costs that are incurred each year
D. are costs incurred due to maintenance and repairing
84. Which construction equipment is correctly- matched with their application in construction industry
A. face shovel- excavation of canals and depositing on the embankment without hauling unit
B. clamshell -vertical lifting loose material such as crushed stone, sand, gravel and coal
C. back hoe- digging above machine level like trenches, footings and basements
D. none
85. Which one is incorrect statement
A. critical path is always longest
B. always realize that $FF \leq TF$



Department of Construction Technology and Management

- C. always realize that $FF \geq TF$
D. may be $FF=TF$
86. which one is incorrect about CPM
- A. Used when Unfamiliar or new activities
 - B. Used where times can be estimated with confidence
 - C. Uses one value of activity time
 - D. CPM is activity oriented
87. Assume that activity A is the start of project and Activity B depends on A and activity C depends on activity B. Each activity its optimistic, most likely and pessimistic times are Activity A (2, 6, and 8) day, Activity B (3, 9 and 12) day, Activity C (2,8 and 10) day respectively then the expected time of this project is
- A. 25.5 day B. 21.5 day C. 31.5 day D. 20.5 day
88. The project time can determined by
- A. Crashing B. Accelerating C. Critical path D. Extra resources
89. The type of brick bond system comprises an alternative header and stretcher and often used to get good aesthetic view
- A. Header bond B. Flemish bond C. Stretcher bond D. English bond
90. During hydration of cement , the reaction of C3A with water is very violent and leads to immediate stiffening of the paste, to prevent this from happening which one of the following should be added to the cement clinker
- A. $Ca(OH)$ B. $CaSO_4 \cdot 2H_2O$ C. $CaSO_4$ D. C_4AF
91. Which one of the following cement is more intended for mass structures such as Gravity dam where you are going to cast mass of concrete at once?
- A. Normal Portland cement
 - B. Moderate Portland cement
 - C. High-Early-Strength Portland cement
 - D. Low -Heat of Hydration Portland cement
92. The most suitable type of equipment for compaction of cohesive soils are
- A. Smooth-wheeled rollers
 - B. Vibratory rollers



Department of Construction Technology and Management

- C. Sheep foot rollers
 - D. Tampers
93. Which one of the following is the real responsibility of contractors?
- A. project scope definition
 - B. legal constraints & permits
 - C. Rectifies defects
 - D. accessing infrastructures
94. Who is the first responsible person for accidents occurring in the construction site if not safety engineer
- A. Site engineer B. Owner C. consultants D. project managers
95. any modification to the contractual guidance provided to the contractor by the Employer or Employer's representative
- A. Addition B. Omission C. Variation order D. Change Order
96. From Construction Accidents Breakdown of fatalities according to type of accident in construction industry which one is most happen
- A. falls from height
 - B. trapped by something collapsing or overturning
 - C. struck by a moving vehicle
 - D. contact with electricity or electrical discharge
97. If you assigned to supervise the project which one is incorrect responsibility
- A. Look after proper execution of project
 - B. Administer the contract
 - C. Certify payment certificates
 - D. Rectifies defects
98. In the case of pre-qualification which proposal check first
- A. Technical Proposal B. Financial proposal C. Both Technical & Financial Proposal check at the same time D. none
99. Bodies who are given the mandate to look after urban housing construction and its associated legalities
- A. ERA B. Municipalities C. Ministry of Works and Urban Development
 - D. Ministry of Water Resources

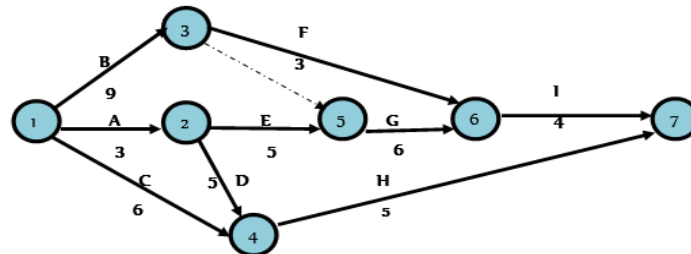


Department of Construction Technology and Management

100. It represents the amount of work that has actually been accomplished or actually executed to date, expressed as the initial budget for that work

- A. Planned value B. Earned value C. Actual cost D. cost performance index

101. For the given Network diagram determine what are the critical Activity



- A. B-F-I B. B-G-I C. A-E-G-I D. A-D-H

102. Based on the above information how long Total Time for project completion in week

- A. 16 B. 18 C. 19 D. 20

103. Based on the above information what is the effect if activity G delays by 3 week?

- A. no Effect B. delay and completed by 22 week C. project completed by 16 week
C. delay and completed by 23 week

104. Assume you are the Program Manager managing the construction of a new Road Project. Five project managers are directly reporting to you. Each project manager is assigned a part of the total scope of works to be executed independently. The total duration allowed to complete all works is 24 months and the total approved budget is 10 Million ETB. At the end of the first year, you should have completed 6 Million ETB worth of work but the project is only 40% complete. Actual costs reported by each project manager for the first year are:

- Project manager 1: 0.2 Million ETB
- Project manager 2: 1.2 Million ETB
- Project manager 3: 1.8 Million ETB
- Project manager 4: 0.5 Million ETB
- Project manager 5: 0.9 Million ETB



Department of Construction Technology and Management

Based on this information what seems like the health status of the project in terms of time?

- a. Behind schedule
- b. A head of schedule
- c. On schedule
- d. None

105. Based on the above question what seems like the health status of the project in terms of cost?

- a. Over budget
- b. Under budget
- c. On budget
- d. None

106. Which of the following is not true about characteristics of soil

- A. loadability- shows the ability of soil to support repeated traffic loading
- B. trafficability- states the ease or difficulty of excavating and loading
- C. Soil volume- change is related with volumes of soil samples on different stress or compaction levels.
- D. All

107. Which shovel family construction equipment greatly perform in excavating in hard soil/mud

- A. backhoe
- B. power shovel
- C. clamshell
- D. all are greatly perform

108. Which property is grouped under tangible asset

- A. Trade marks
- B. equipment
- C. patents
- D. copyrights

109. Which one of the following is correct about swell

- A. an increasing in volume of soil due to excavation
- B. decreasing in volume of soil due to excavation
- C. an increasing in volume due to compaction
- D. is the ratio of bank volume to loose volume

110. In which type of contract all risks assigned to the contractor

- A. Unit Price Contract
- B. Lump Sum Contract
- C. Cost reimbursable contract
- D. Cost plus contract