GENERAL CERTIFICATE OF EDUCATION BOARD

Technical and Vocational Education Examination

JUNE 2022 ADVANCED LEVEL

Specialty Name and Acronym	CIVIL ENGINEERING BUILDING CONSTRUCTION CE-BC (F4-BA)
Centre No.	
Centre Name	
Candidate No.	
Candidate Name	

Mobile phones are **NOT** allowed in the examination room

7201 BUILDING CONSTRUCTION TECHNOLOGY AND PRACTICE 1 : MULTIPLE CHOICE QUESTION PAPER

One and a half hours

INSTRUCTIONS TO CANDIDATES

Read the following instructions carefully before you start answering the questions in this paper. Make sure you have a soft HB pencil and an eraser for this examination.

1. USE A SOFT HB PENCIL THROUGHOUT THE EXAMINATION.
2. DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

Before the examination begins:

3. Check that this question booklet is headed **Advanced Level – 7201 BUILDING CONSTRUCTION TECHNOLOGY AND PRACTICE 1**
4. Fill in the information required in the spaces above.
5. Fill in the information required in the spaces provided on the answer sheet using your HB pencil: **Candidate Name, Exam Session, Subject Code, Centre Number and Candidate Identification Number.** Take care that you do not crease or fold the answer sheet or make any marks on it other than those asked for in these instructions.

   How to answer the questions in this Examination
6. Answer **ALL** the 50 questions in this examination. All questions carry equal marks.
7. Non programmable calculators are allowed.
8. Each question has FOUR suggested answers: **A, B, C** and **D**. Decide which answer is appropriate. Find the number of the question on the Answer Sheet and draw a horizontal line across the letter to join the square brackets for the answer you have chosen.

   For example, if **C** is your correct answer, mark **C** as shown below:

   [A] [B] [~~C~~] [D]
9. Mark only one answer for each question. If you mark more than one answer, you will score a zero for that question. If you change your mind about an answer, erase the first mark carefully, then mark your new answer.
10. Avoid spending too much time on any one question. If you find a question difficult, move on to the next question. You can come back to this question later.
11. Do all rough work in this booklet using the blank spaces in the question booklet.
12. **At the end of the examination, the invigilator shall collect the answer sheet first and then the question booklet. DO NOT ATTEMPT TO LEAVE THE EXAMINATION HALL WITH IT.**

Turn Over

1. What should be the first task in the setting out of a building on a site?
   - A Establish an access road.
   - B Know the datum point.
   - C Establish the base line.
   - D Know the real dimensions of the site.

2. Which one of the following factors is not considered for the orientation of buildings?
   - A The direction of the prevailing winds in the area
   - B The exposure of the walls and roof of the buildings to the rays of sun
   - C The extent up to which the sunrays penetrate with the verandah
   - D The precipitation of the area

3. Foundations are placed below ground level, to increase
   - A Strength.
   - B Workability.
   - C Stability.
   - D Bearing.

4. From the following, select the appropriate steps involved in the process of concreting.
   - A Compacting, Batching, Mixing, Transporting and placing of concrete
   - B Mixing, Batching, Transporting, placing and Compacting of concrete
   - C Batching, Mixing, Transporting, placing and Compacting of concrete
   - D Batching, Placing of concrete, Compacting, Mixing and Transporting

5. Walls built under a suspended timber ground floor before erecting the floor are called
   - A Honey comb walls
   - B Sleeper walls
   - C Retaining walls
   - D Buttress walls

6. Bearing capacity of a soil is,
   - A Self-load per unit area carried by the ground.
   - B Pressure produced on the ground by the loads.
   - C Total load a soil can carry.
   - D Total pressure produced by the building on the ground.

7. Which of the following is wrong in the placement of the DPC of a building?
   - A In segments.
   - B Impervious.
   - C Horizontal and vertical.
   - D Continuous.

8. Columns of multi-storied buildings are designed to withstand the forces due to,
   - A Dead and live loads.
   - B Dead loads, live loads and axial loads.
   - C Dead loads, live loads and wind pressure.
   - D Dead loads, live loads and horizontal loads.

9. Durability of concrete normally goes together with,
   - A .Strength.
   - B Hardness.
   - C Toughness
   - D Brittleness.

10. A panel wall is an
    - A Internal non-load bearing wall
    - B External load-bearing wall
    - C Internal load-bearing wall
    - D External and internal non-load bearing wall

11. In which type of concrete is the steel pre-tensioned before the superimposed load is applied?
    - A Light weight concrete
    - B Pre-stressed Concrete
    - C Reinforced concrete
    - D Cyclopean concrete

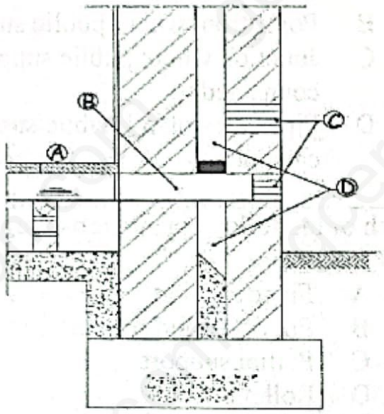
12. The advantage of flying shore over racking shore is,
    - A Stronger to support buildings.
    - B Support higher structures of any level.
    - C To provide clear working space under.
    - D To give a good working space above the shore.

13. Choose the incorrect statement:
    - A A combined footing is used when two columns are very closed to each other such that their footing overlap.
    - B A combined footing is used when the load bearing capacity of the soil is low thus, requiring more area under individual footings.
    - C A combined footing is used when the column is closed to the boundary, so the footing cannot be spread in that direction.
    - D A combined footing is used when the dead load cannot be carried by a single footing.

14. For good weathering of window sills, they should be
    - A Treated.
    - B Corniced.
    - C Corbelled.
    - D Throated.

15. The wind load on a steel truss for an industrial building will depend upon
    A Location and shape of the structure
    B Shape and length of the structure
    C Location, shape and height of the structure
    D Shape, height and breath of the structure

16. From the figure below, what is the purpose of the member "C"?



    A To allow circulation of fresh air into the cavity
    B To evacuate drained water from the cavity
    C To fight against capillary reaction in the cavity
    D To fight against rising moisture from the ground

17. Which of the following is not related to underpinning?
    A Uneven loading.
    B Action of tree roots.
    C Unequal resistance of the soil.
    D Very tall structure with poor loading.

18. Choose from the following, an inclined member of a roof truss.
    A Rafter
    B Purlin
    C king post
    D strut

19. The first step in the installation of sheet piles is,
    A laying in sequence
    B Inspecting for straightness, cracks and interlocking components
    C Driving or vibrating the piles
    D Cleaning and hammering

20. Portal frames are frequently used in factory buildings to:
    A Transfer vertical forces
    B Transfer moment
    C Transfer horizontal forces
    D Transfer axial forces

21. One of the advantages of pre-stressed concrete over traditional reinforced concrete is _____
    A Its moment carrying capacity
    B It uses the entire section to resist the load
    C It is more complex technically
    D Its foundation carrying capacity

22. One of the wall of a acvity wall is :
    A Decorative wall.
    B Leaf wall.
    C Pilaster wall.
    D Buttress wall.

23. The two main components on the electrical board for internal supply of electrical current are :
    A Meter and circuit breaker.
    B Meter and fuse.
    C Fuse and connectors.
    D Main connectors and meter.

24. In underpinning, which of the following statement is incorrect?
    A Underpinning is necessary when there is an uneven loading of the foundation.
    B Underpinning is necessary when there is an unequal resistance of the subsoil.
    C Underpinning is necessary when the foundation is subjected to the actions of tree roots.
    D Underpinning is necessary when there is need to create a new opening on an existing wall.

25. Which of the following is one of the causes of cracks on structure?
    A Exposed building.
    B Uneven settlement.
    C Height of the building.
    D Constant movement in and around concrete over site.

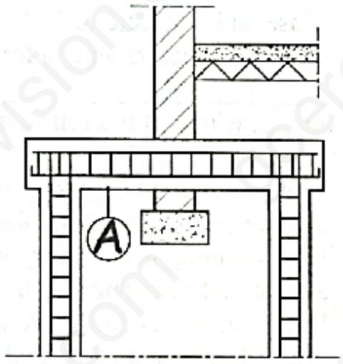
26. Piles that transmit their loads through surface contact with the soil are known as:
    A Bearing pile
    B Sheet pile
    C Battered pile
    D Friction pile

27. A type of foundation suitable when constructing in soils with varied bearing capacity is:
    A Pad foundations
    B Raft foundations
    C Isolated foundations
    D Strip foundations

28. In a flight of stairs, the number of treads is equal to
    A Risers in the flight.
    B Risers plus one.
    C Risers minus one.
    D Goings plus one.

29. The following are parts of a typical beam formwork :
    A Sole plate, stringer, needle and wall plate.
    B Stringers, middle shore, sole plate and brackets.
    C Props, braces, sole plate and soffit board.
    D Soffit board, props, wall plate and needle,

30. With reference to the figure below, identify the member shown at ''A''



    A Ground beam
    B Cantilever beam
    C Chain beam
    D Needle beam

31. Choose the test use to check the straightness of drainage network.
    A Smoke test.
    B Upstream water test.
    C Drain run filled with fluorescent dye.
    D Torch light test.

32. Select from the following, the method which is not suitable for stabilizing soils.
    A Compaction
    B Confining
    C Constriction
    D Void filling

33. The effect of the rise of ground water level of foundation strata is
    A Failure.
    B Movement.
    C Displacement.
    D Deformation.

34. Water mains in a plumbing network has as function to,
    A Point where public supply arrives the building.
    B Point from where public supply is taken.
    C Junction where public supply is connected.
    D Pipe carrying all public supply from catchment.

35. Which of the following supports are not used in portal frames?
    A Fixed support
    B Pin or hinged support
    C Partial support
    D Roller

36. In drainage, the function of a saddle back is to connect,
    A Two new pipes.
    B A new pipe to an existing one.
    C A pipe with larger diameter to a smaller diameter.
    D Two old pipes.

37. Two factors that influence the choice of the type of Timbering applied to excavation are :
    A The width of excavation and the type of load.
    B Type of structure and depth of the excavation.
    C Method of excavation and nature of sub soil water.
    D Width of excavation and nature of soil.

38. The window which projects outside the roof of a building to admit more light and air is known as,
    A Casement window.
    B Dormer window.
    C Bay window.
    D Projected window.

39. An angle of repose of a soil is
    A The angle to which a soil can retain itself without collapse
    B The right angle at which retaining walls are built
    C The angle that clay soils collapses when it value is low
    D The angle to which embankment walls are constructed

Go on to the next page

40. Which of the following is not an advantage of pre-stressed concrete?
    A Smaller and lighter structures
    B Needs less materials
    C Very effective for deflection control
    D Needs higher quality materials

41. A party wall is a wall that separates _____ residencies within the _____ building.
    A Same, same
    B Same, different
    C Different, different
    D Different, same

42. A brick laid with its length parallel to the face of a wall is known as :
    A Header.
    B Stretcher.
    C Closer.
    D Queen closer.

43. A Floor
    A Separates levels within the building
    B Reduce levels within the building
    C Increase levels within the building
    D Equilibrate levels within the building

44. What is the effect of concrete being dropped from a height ?
    A Splitting.
    B Separating.
    C Segregation.
    D Disintegration.

45. Select the correct statement in steel construction.
    A Material cost of rivet is higher than that of a bolt.
    B Bolts are used as a temporary fastening whereas rivets are used as permanent fastenings.
    C Tensile strength of a bolt is lesser than that of a rivet.
    D Riveting is less noisy than bolting.

46. Raft foundations are generally preferred to when the area required for individual footing, is more than
    A 25% of total area.
    B 30% of total area.
    C 40% of total area.
    D 50% of total area.

47. For loose soil, the formula used to find the minimum depth of foundation is the;
    A Rankine's formula
    B Hiley formula
    C Bernoulli's formula
    D Newton formula

48. Differentiate between hand demolition and deliberate collapse.
    A Hand demolition is demolishing from base while deliberate demolition is demolishing from the top.
    B Hand demolition is done by vibrators while deliberate demolition is done by the used of gas explosion.
    C Hand demolition is done by the use of hydraulic jack while deliberate demolition is done by the used of explosives.
    D Hand demolition is done by the use of hand tools while deliberate demolition is done by removing key structural members.

49. The unit for current is
    A Watt.
    B Ampere.
    C Volt.
    D Ampere volt.

50. Water table is
    A Free water flowing on the site.
    B The level of water as seen on the plan.
    C Water level at the surface of excavation.
    D Natural ground water level in the ground.

STOP

NOW GO BACK AND CHECK YOUR WORK