

Question Bank (K scheme)

Name of Subject: Emerging Trends in Civil Engineering (ETC)

Subject code: 315315

Semester: V

Unit Test: II

Course: CE5K

Each question carries 1 mark

Unit III: Advance Construction Equipments

1. _____ is loader machine with a tracked chassis and a loader that can be used for digging and moving/loading materials

- a. Skid Loader
- b. Crawler Loader
- c. Excavator
- d. None of these

Ans. b. Crawler Loader

2. The trencher which cuts with a digging chain or belt that is driven around a rounded metal frame or boom is called:

- a. Rockwheel trencher
- b. Chain Trencher
- c. Micro Trencher
- d. Portable trencher

Ans. b. Chain Trencher

3. The following is used to transport materials having flat bottoms.

- a. Belt conveyor
- b. Roller conveyor
- c. Chain conveyor
- d. None of the above

Ans. b. Roller conveyor

4. _____ is a machine used for moving or removing dirt, gravel and any other unnecessary material from the surface.

- a. Scraper
- b. Shovel
- c. Trencher
- d. Backhoe

Ans. a. Scraper

5. What is a Bridge Girder Launcher used for?

- a. Road paving
- b. Lifting soil
- c. Launching precast girders into position
- d. Drilling holes

Ans. c. Launching precast girders into position

6. What is the main function of a road header?

- a. Paving roads
- b. Excavating tunnels and rock faces
- c. Lifting beams
- d. Scanning earth layers

Ans. b. Excavating tunnels and rock faces

7. Which of the following is NOT a component of TBM?

- a. Gripper shoes
- b. Concrete truck
- c. Cutter head
- d. Backup system

Ans. b. concrete truck

8. Line boring machines are generally used in _____.

- a. Earth cutting
- b. Pipe laying
- c. Equipment repair and maintenance
- d. Plastering

Ans. c. Equipment repair and maintenance

9. Which TBM method is used in soft ground with high water pressure?

- a. Earth pressure balance
- b. Open type TBM
- c. Slurry Pressure balance
- d. Gripper TBM

Ans. c. Slurry Pressure balance

10. Hybrid offset pavers are ideal for _____.

- a. Tunneling works
- b. Sidewalk and barrier construction
- c. Plastering walls
- d. Line boring

Ans. b. Sidewalk and barrier construction

Unit IV: Sustainability in Construction

11. What is the main objective of an energy audit in industries?

- a. Increase water consumption
- b. Reduce labor cost
- c. Reduce energy consumption and operating costs
- d. Increase production time

Ans. c. Reduce energy consumption and operating costs

12. Which act defines Energy Audit in India?

- a. Environment Protection Act, 1986
- b. Energy Conservation Act, 2001
- c. Factory Act, 1948
- d. Electricity Act, 2003

Ans. b. Energy Conservation Act, 2001

13. What is the key benefit of implementing SuDS?

- a. Higher construction costs
- b. Urban flooding prevention
- c. Increased impervious surfaces
- d. Increased energy use

Ans. b. Urban flooding prevention

14. Which principle is not associated with SuDS?

- a. Water quality management
- b. Energy generation
- c. Water quality improvement
- d. Amenity and biodiversity enhancement

Ans. b. Energy Generation

15. Which of the following is NOT a phase of a detailed energy audit?

- a. Planning phase
- b. Pre-audit phase
- c. Audit phase
- d. Post-audit phase

Ans. a. Planning phase

16. Which of the following is a renewable construction material?

- a. Steel
- b. Bamboo
- c. Plastic
- d. Aluminium

Ans. b. Bamboo

17. What is the main benefit of using recyclable materials in construction?

- a. Increase landfill waste
- b. Improve noise levels
- c. Reduce environment impact
- d. Slow down construction

Ans. c. Reduce environment impact

18. Why is it important to use renewable materials in construction?

- a. They are costlier
- b. They need more maintenance
- c. They are naturally replenishable and sustainable
- d. They cannot be recycled

Ans. c. They are naturally replenishable and sustainable

19. The 4 R's in waste management stand for:

- a) reduce, reuse, record, recover
- b) reuse, recycle, recover, resupply
- c) reduce, reuse, recycle, recover
- d) reuse, recycle, recover, rehabilitate

Ans: (c) reduce, reuse, recycle, recover

20. Solar, wind, geothermal, ocean thermal energy sources are all examples of:

- a) renewable energy sources
- b) non-renewable energy sources
- c) exhaustible energy sources
- d) none of the above

Ans: a) renewable energy sources

21. _____ is an inspection survey and an analysis of energy flows for energy conservation in a building.

- a. solar audit
- b) structural audit
- c) financial audit
- d) energy audit

Ans: (d) energy audit

22. Which of the following is a challenge in recycling construction materials?

- a. Abundance of space
- b. Cost-effectiveness
- c. Segregation and processing
- d. High demand

Ans. c. Segregation and processing

Unit V: Advance Construction Techniques

23. What is the primary advantage of MIVAN technology in building construction?

- a. Increased floor thickness
- b. Speed and quality of construction

- c. Traditional aesthetics
- d. Manual Plastering

Ans. b. Speed and quality of construction

24. Which material is used in MIVAN formwork?

- a. Timber
- b. Steel
- c. Aluminium
- d. Plastic

Ans. c. Aluminium

25. The primary function of a building façade is _____.

- a. Increase the weight of the structure
- b. Add external stairs
- c. Improve energy efficiency and aesthetics
- d. Reduce number of floors

Ans. c. Improve energy efficiency and aesthetics

26. Which technology is used in smart roads for communication?

- a. Bluetooth beacons
- b. Sensors and IoT devices
- c. Telegraph cables
- d. Manual controls

Ans. b. Sensors and IoT devices

27. Which material is commonly used for passive fire protection?

- a. Asphalt
- b. Fire-retardant boards and coatings
- c. Steel
- d. Aluminium foil

Ans. b. Fire-retardant boards and coatings

28. Which material is commonly used in 3D printed buildings?

- a. Plastic
- b. Wood
- c. Special concrete mixes
- d. Rubber

Ans. c. Special concrete mixes

29. What is the main objective of anti-icing roads?

- a. Improve brightness
- b. Reduce traffic flow
- c. Prevent ice formation on road surfaces

d. Block highways

Ans. c. Prevent ice formation on road surfaces

30. Piezoelectric roads are beneficial for _____

- a. Reducing road height
- b. Roadside agriculture
- c. Sustainable energy generation
- d. Making bridges lighter

Ans. c. Sustainable energy generation

31. Soil nailing is primarily used to _____

- a. Hold soil samples for testing
- b. Decorate landscape gardens
- c. Stabilize slopes and excavations
- d. Plant trees

Ans. c. Stabilize slopes and excavations

32. Which type of environment is best suited for ground freezing?

- a. Dry sand
- b. Water-bearing loose soils
- c. Rocky terrain
- d. Saline soil

Ans. b. Water-bearing loose soils

33. Micro piles are generally used in _____

- a. Shallow pavements
- b. Heavy industrial floors
- c. Limited access or low headroom sites
- d. Sand dunes

Ans. c. Limited access or low headroom sites

34. The primary goal of sand drains is to _____

- a. Stop soil erosion
- b. Improve capillary action
- c. Expedite settlement by draining water
- d. Improve surface colour

Ans. c. Expedite settlement by draining water

35. Which mode of transport does hyperloop combine

- a. Train and bus
- b. Plane and boat
- c. Train and aircraft
- d. Metro and tram

Ans. c. Train and aircraft

36. Hyperloop aims to reduce _____

- a. Train width
- b. Transport noise
- c. Travel time and carbon emissions
- d. Number of wheels

Ans. c. Travel time and carbon emissions

37. Which drilling method is often used for micro piles?

- a. Auger boring
- b. Manual digging
- c. Rotary drilling
- d. Laser cutting

Ans. c. Rotary drilling

38. Which type of structure benefits most from soil nailing?

- a. Temporary warehouses
- b. Vertical or steep cut slopes
- c. Underground pipelines
- d. Bridge decks

Ans. b. Vertical or steep cut slopes

39. What material is filled into the boreholes for sand drains?

- a. Cement
- b. Bentonite
- c. Coarse sand
- d. Lime powder

Ans. c. Coarse sand

40. A PVD consists of _____

- a. Copper wire mesh
- b. Synthetic core wrapped in filter fabric
- c. Bamboo strips
- d. Ceramic rods

Ans. b. Synthetic core wrapped in filter fabric

