

**Fourth Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.2024**  
**Earth Moving Equipments**

Time: 1 hr.]

[Max. Marks: 50

## INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **fifty** questions, each question carries one mark.
  2. Use only **Black ball point pen** for writing / darkening the circles.
  3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
  4. Darkening two circles for the same question makes the answer invalid.
  5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.
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1. Scraper is used for
    - a) Scraping of soils
    - b) excavation only
    - c) execution, transporting and dumping of soil
    - d) None of these
  2. In early days bulldozers has ----- blades
    - a) steel
    - b) fiber
    - c) wooden
    - d) Iron
  3. A ----- is very useful equipment and it can be used for construction work like to clear the site of work, to make the land level, etc.,
    - a) Scraper
    - b) Grader
    - c) Bulldozer
    - d) Excavator
  4. Most earthmoving machinery uses ----- as the primary source of motion.
    - a) pneumatic drive
    - b) Mechanical drive
    - c) Hydraulic drive
    - d) Electrical drive
  5. Which is not the component of excavator
    - a) stick
    - b) boom
    - c) zommer
    - d) side link dog bones
  6. Which application the excavator is used for
    - a) Demolition
    - b) Material Handling
    - c) Mining
    - d) All of the these
  7. Backhoe loaders are usually mounted on,
    - a) chain
    - b) stand
    - c) grapples
    - d) Tires
  8. Which is not the attachment of loader
    - a) bucket
    - b) Hay and silage
    - c) Grapples
    - d) Tires
  9. ----- types of excavator carries shovel at its lower end.
    - a) dragline
    - b) clamshell
    - c) backator
    - d) power shovel
  10. ---- is heavy equipment with a longblade that is used to create a flat surface.
    - a) excavator
    - b) grapples
    - c) backator
    - d) Grader

11. The ---- is one of the type of grader blade.
  - a) Double level curved blade
  - b) Single bevel flat blade
  - c) Carbide coated blade
  - d) Straight blade
12. The heavy equipment used to compact materials like concrete, soil gravel
  - a) Road roller
  - b) Power shovel
  - c) Tractor
  - d) excavator
13. The system is necessary for all petrol engines in order to provide the spark for combustion
  - a) Ignition system
  - b) Injection system
  - c) Scavenging system
  - d) All of the these
14. The system which increase the efficiency, power output and the torque of an internal combustion engine by forcing extra compressed air into the combustion chamber
  - a) Turbo chargers
  - b) Injection system
  - c) Carburetor
  - d) Ignition system
15. Which is not the suspension system,
  - a) wire suspension
  - b) Air suspension
  - c) Hydroelastic suspension
  - d) Rubber spring suspension
16. Advantages of using tracks as a under carriage component
  - a) Low speed
  - b) Traction
  - c) early break
  - d) Less Manoeuvrability
17. Which is common air suspension problem?
  - a) Cooler failure
  - b) Air line failure
  - c) Spacing failure
  - d) Sound failure
18. ----- is a key element to the efficiency of the power production in engine.
  - a) sound
  - b) timing
  - c) petrol
  - d) air
19. Which company Not a manufacture of excavator.
  - a) caterpillar
  - b) JBM
  - c) JCB
  - d) CASE
20. VOLVO construction equipments, India located in
  - a) Hesargatta
  - b) Peenya
  - c) Doddaballapur
  - d) Narasapura
21. The mechanism used to transmit the power from engine of an automobile to the driving wheels.
  - a) transformation system
  - b) Energy conversion system
  - c) transmission system
  - d) All of the these
22. The transmission system used to transfer large torque in the most compact arrangement
  - a) countershaft transmission
  - b) Auxiliary transmission
  - c) planetary transmission
  - d) compound transmission
23. One-way clutch is also known as
  - a) spring clutch
  - b) single clutch
  - c) sprag clutch
  - d) All of these
24. The device that is used, typically on heavy vehicles to augment or replace any of the functions of primary friction based braking system
  - a) Tictors
  - b) retros
  - c) retarders
  - d) airchips
25. Which is not a type of Retarders?
  - a) engine
  - b) hydraulic
  - c) pneumatic
  - d) electric



26. Which is the component of hydro shift automatic transmission?
  - a) The passage ways
  - b) Gear pump
  - c) The governor
  - d) All of the above
27. Select the type of PTO shaft
  - a) Domestic
  - b) Metric
  - c) Shear
  - d) All of the above
28. Final drive is a
  - a) torque increasing unit
  - b) torque reduction unit
  - c) speed increasing unit
  - d) speed reduction unit
29. Which gear will produce clicking noise during teeth contact
  - a) worm gear
  - b) bevel gear
  - c) helical gear
  - d) spur gear
30. Which among the following fluid parameters are not controlled by the control valves?
  - a) Rate of flow
  - b) Pressure
  - c) Direction of flow
  - d) Speed
31. Electromagnetic retarders is based on
  - a) Eddy current principle
  - b) Seebach effect principle
  - c) Induction principle
  - d) Magnetic levitation principle
32. While making a turn which mechanism allows the outer drive wheel to spin
  - a) Differentials
  - b) Bevel gears
  - c) torque tube
  - d) floating
33. 'PTO' stands for
  - a) Power take-off
  - b) Push to-out
  - c) Power trial-off
  - d) Power take-on
34. The mechanism which automatically disengages the PTO when it strikes a strong object and engages back one it gets passed the object thus protecting it from damage.
  - a) Slip-clutch
  - b) Non-shear type
  - c) Shear type
  - d) Metric
35. Gear pump is also called
  - a) Positive displacement pump
  - b) Negative displacement pump
  - c) Displacement pump
  - d) None of the above
36. The device which converts mechanical energy of derive into hydraulic energy
  - a) Motor
  - b) Pump
  - c) Valve
  - d) None of the above
37. Select the type of gear pump
  - a) Balanced
  - b) Gerotor
  - c) Unbalanced
  - d) None of above
38. What is the function of the control valve
  - a) To perform two operations in sequence
  - b) To control different parameter of the fluid
  - c) To control the direction of flow
  - d) None of the above
39. Which among the following are not the main selection criteria of the control valves?
  - a) Type of actuation
  - b) Software support
  - c) Space requirement
  - d) Environmental conditions

40. A gerotor unit consists of an inner and outer rotor. The inner rotor has  $N$  teeth, and the outer rotor has  
 a)  $N + 2$  teeth                      b)  $N + 1$  teeth                      c)  $N + 3$  teeth                      d)  $N$  teeth
41. Equipment operating instructions are  
 a) for new operator                      b) Just a set of guidelines  
 c) Specific steps to follow every time                      d) None of these
42. The emergency stop button is for  
 a) Normal starting and stopping of equipment  
 b) Only for less fuel condition  
 c) For hazardous conditions  
 d) None of the above
43. The removal of earth for highway formation is  
 a) embankment                      b) Sub grade                      c) Excavation                      d) Filing
44. Why is construction equipment yellow in colour?  
 a) government regulations                      b) Lesser cost  
 c) High visibility                      d) None of these
45. The actuation devices that use pressurized hydraulic fluid to produce linear motion and force.  
 a) Hydraulic motor                      b) Hydraulic valve  
 c) Hydraulic cylinder                      d) Hydraulic pumps
46. Safety rules need to follow before operating heavy earth moving equipments.  
 a) Check for faults                      b) Check series schedule and history  
 c) Working area inspection                      d) All of the these
47. Criteria for selection of earth moving equipment  
 a) depending upon type of solid/material                      b) Depending on the weather condition  
 c) depending on the hauling distance                      d) All of the above
48. If you see warning labels or signs on earth moving equipment you should  
 a) Read and understand what they mean  
 b) Follow all the precautions in the labels  
 c) Ask other, if you don't understand  
 d) All of the above
49. The trucks with automatic unloading device are called -----  
 a) dumpers                      b) Trailers                      c) Conveyor                      d) Dump tracks
50. Which type of pump consists of two spur or helical gears?  
 a) Vane pumps                      b) Lobe pump  
 c) Rotary pumps                      d) External gear pumps

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