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Question Paper Version : A

Fourth Semester B.E. Degree Examination, June/July 2023

**Earth Moving Equipment**

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. Turbo chargers are centrifugal compressors driven by the exhaust gas turbines.  
a) True                      b) False
  2. If there are 7 clutch plates in a multi plate clutch, what is the number of pairs of contact surfaces?  
a) 5                          b) 4                          c) 8                          d) 6
  3. Heavy lifting work is often accomplished by fluids in big machines, the power system of such machines can be described as  
a) Reciprocating      b) Pneumatic              c) Hydraulics              d) Hybrid
  4. On what scientific principle hydraulic systems works?  
a) Boyle's law                      b) Pascal's law  
c) Bernoulli's principle              d) The fluid flow principle
  5. \_\_\_\_\_ is usually mounted on two or four pneumatic tyred wheels.  
a) Scrapper                      b) Back actor              c) Elevator                      d) Escalator
  6. Which type of excavator used for digging the foundation trenches below operating level.  
a) Clamshell                      b) Back actor              c) Power shovel              d) Skimmer
  7. When the engine is suddenly accelerated there will be a small time delay before the extra energy discharged into the turbine housing volute can speed up the turbine wheel.  
a) True                          b) False
  8. What is the purpose of Air – suspension?  
a) Used for leveling purpose                      b) Reduce the suspension weight  
c) Increase the directional stability              d) Reduce the space occupation

9. Which of the following contains no linkage between the clutch and the pedal?
  - a) Clutch by wire
  - b) Hydraulic single plate clutch
  - c) Wet clutch
  - d) Hydraulic multi plate clutch
10. Which of the following is the need of the gear box?
  - a) To vary the speed of the vehicle
  - b) To vary the torque of the vehicle
  - c) To vary the power of the vehicle
  - d) To vary the acceleration of the vehicle
11. The turbo charged diesel engines requires \_\_\_\_\_ cooling air than naturally aspirated diesel engines.
  - a) less
  - b) more
  - c) equal
  - d) None of the mentioned
12. After – cooling is used to
  - a) Remove impurities from air
  - b) Reduce volume of air
  - c) Cause moisture and oil vapour to droplet
  - d) Cool the air
13. Which one of the following drives is used for transmitting power without slip?
  - a) Belt drives
  - b) Rope drives
  - c) Cone pulleys
  - d) Chain drives
14. \_\_\_\_\_ are used as support loads.
  - a) Frames
  - b) machines
  - c) Truss
  - d) Beams
15. A \_\_\_\_\_ is used to level the ground and spreads the loose materials.
  - a) Excavators
  - b) Scrappers
  - c) Graders
  - d) Tractors
16. Which equipment is used for short haul distance of 100 m?
  - a) Bull dozer
  - b) Scrappers
  - c) power shovel
  - d) Hoe
17. A single acting cylinder can be pressurized externally from one direction only.
  - a) True
  - b) False
18. In hydraulic systems
  - a) The mechanical energy is transferred to the oil and then converted into mechanical energy.
  - b) The electrical energy is transferred to the oil and then converted into mechanical energy.
  - c) The mechanical energy is transferred to the oil and then converted into electrical energy.
  - d) None of the above.
19. What is a positive displacement pump?
  - a) Oil from suction side of the pump flows completely to the delivery side.
  - b) Volume of fluid discharged cannot return back to the suction side of the pump
  - c) Discharges fixed, volume of fluid every cycle.
  - d) All of the above.
20. What type of excavator carries the skimmer at its lower end?
  - a) Skimmer
  - b) Dredger
  - c) Escalator
  - d) Elevator
21. Dragline cannot excavate \_\_\_\_\_.
  - a) Soft rocks
  - b) Black cotton soil.
  - c) Clay
  - d) Stiff materials



22. Which equipment uses wooden blades in early days  
a) Bull dozer      b) Scraper      c) Shovel      d) Back hoe
23. Turbo charged engines produce lower cylinder volumetric efficiencies compared with normally aspirated induction systems.  
a) True      b) False
24. Where the clutch is located?  
a) Between transmission and engine      b) Between transmission and rear axle  
c) Between transmission and propeller shaft      d) Between transmission and differential
25. In which of the configuration of epicyclic gear box output will be forward and fast output speed?  
a) Sun gear stationary, ring gear driven, planet carries driving.  
b) Sun gear driving, ring gear driven, planet carries stationary.  
c) Sun gear driven, ring gear stationary, planet carries driving.  
d) Sun gear stationary, ring gear stationary, planet carries driving
26. Increase of torque in a vehicle is obtained by decreasing power.  
a) True      b) False
27. The adjustment for back lash in a differential is provided between  
a) Crown wheel and Sun gear      b) Crown wheel and Planet gear  
c) Sun gear and Planet gear      d) Crown wheel and drive pinion
28. In one way valve that lets air into the reservoir of a compressor but doesn't let it out, is a  
a) Check valve      b) Receiver valve      c) Control valve      d) Three way valve
29. When the piston area of the cylinder is connected to the atmosphere, the piston of the single acting cylinder is pressed by the spring to the  
a) Cylinder centre      b) Cylinder down      c) Cylinder upper      d) Cylinder bottom
30. Which of the following is used as a component in hydraulic power unit?  
a) Pressure gauge      b) filler gauge      c) Valve      d) Reservoir
31. In which equipment consists of a large bucket which is attached to a tractor  
a) Bull dozer      b) Scraper      c) Grader      d) Escalator
32. \_\_\_\_\_ is a self propelled machine which is used mainly to exert a powerful tractive force for pulling other machines.  
a) Tractor      b) Bull dozer      c) Angle dozer      d) Scraper
33. The force developed in hydraulic system is high due to  
a) High pressure      b) more oil      c) less pressure      d) less oil
34. Hydraulic systems are slower in operation.  
a) True      b) False
35. Which of the following is used as an accessory in hydraulic power unit.  
a) Pumps      b) Valves      c) Motor      d) Reservoir
36. Purpose of using differential gear in automobile is to  
a) Control speed      b) Avoid jerks      c) Helps in turning      d) None of the above

37. Which type of the gear is used in constant mesh gear box?  
 a) Spur gear                      b) Helical gear                      c) Bevel gear                      d) Worm gear
38. In which type of manual transmission the double declutching used?  
 a) Constant mesh gear box                      b) Sliding mesh gear box  
 c) Synchromesh gear box                      d) Epicyclical gear box
39. Size of the bull dozer is indicated by the dimension of its \_\_\_\_\_  
 a) Site                      b) Tyre                      c) Engine                      d) Blades
40. A grader which is told by a tractor is known as \_\_\_\_\_  
 a) Tractor grader                      b) Motor grader                      c) Scraper                      d) Elevating grader
41. Type of scraper consists of four wheeled scraper bowl towed behind crawler power unit.  
 a) Three axle                      b) Two axle                      c) Crawler drawn                      d) Four axle
42. Which component of hydraulic system used to store the sufficient amount of hydraulic oil?  
 a) Rotary pumps                      b) Oil reservoir                      c) Flow control valve                      d) Pressure gauge
43. What pumps hydraulic oil to the hydraulic circuit?  
 a) Flow control valve                      b) Rotary pumps  
 c) Oil reservoirs                      d) Pressure gauge
44. Where is the over drive is located?  
 a) between transmission and engine                      b) between transmission and rear axle  
 c) between transmission and propeller shaft                      d) between transmission and differential
45. Pumps used in hydraulic applications are  
 a) Positive displacement pumps                      b) Variable displacement pumps  
 c) Fixed displacement pumps                      d) All of the above
46. The \_\_\_\_\_ of an equipment mainly includes the amount spent for fuel and lubricating oil.  
 a) Maintenance and repairs                      b) Refurbishment  
 c) Operation cost                      d) Installation cost
47. The blade angle of bull dozer is usually  
 a) 60°                      b) 90°                      c) 15°                      d) 45°
48. Which of the following is not a part of Automatic transmission?  
 a) Epicyclic gear box                      b) Torque converter  
 c) Multiplate clutch                      d) Sliding mesh gear box
49. In which of the gear box Sun and Planet gear set is used?  
 a) Constant mesh                      b) Sliding mesh                      c) Synchromesh                      d) Epicyclical
50. The precise control of excavation is possible by  
 a) Scraper                      b) Hoe                      c) Shovel                      d) Bull dozer

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