

Maharashtra Engineering Training Academy, Nashik

Professional Exam Division

Practice Question for AE2/JE Exam - Set 16 - (22/08/2024)

Mechanical Practical

सदर सराव प्रश्न हे परीक्षार्थींच्या सोईसाठी व सरावासाठी देण्यात येत आहेत. परीक्षार्थींच्या वारंवार मागणीनुसार सदर प्रश्नांची उत्तरे उपलब्ध करून देण्यात येत आहेत. तरी या सराव प्रश्न व उत्तरे यांची खात्री परीक्षार्थींनी आपल्या स्तरावर तपासून पाहणे. या विषयीच्या कुठल्याही तक्रारीची दखल या कार्यालयामार्फत घेण्यात येणार नाही याची नोंद घ्यावी.

Sr. No.	Question	Correct Option	Option 1	Option 2	Option 3	Option 4
1	What component of an engine converts the reciprocating motion of the piston into rotational motion?	2	Camshaft	Crankshaft	Timing belt	Flywheel
2	What is the primary function of a bulldozer?	2	Digging trenches	Moving large quantities of material	Crushing rocks	Drilling holes
3	What is the primary function of a road roller?	2	To cut and grade soil	To compact soil, asphalt, or concrete	To lift heavy loads	To transport materials
4	What is the primary function of an air compressor?	3	To increase the temperature of air	To reduce the pressure of air	To increase the pressure of air	To filter impurities from air
5	In a road roller, the term "vibration" is used to describe:	1	The movement of the drum during compaction	The noise generated by the engine	The shaking of the operator's platform	The cooling system's operation
6	In a scroll compressor, how is air compressed?	3	By rotating screws	By moving pistons	By compressing air between two interleaved spirals	By centrifugal force
7	What part of the bulldozer is used for pushing and leveling material?	1	Blade	Bucket	Arm	Track

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8	Which component is used to regulate the amount of air entering the engine?	2	Air filter	Carburetor	Timing belt	Radiator
9	What is the primary purpose of the scraper blade attached to some road rollers?	2	To smooth the surface before compaction	To clear debris from the drum	To lift and move material	To adjust the drum's pressure
10	What part of the engine is responsible for removing exhaust gases?	1	Exhaust manifold	Intake manifold	Fuel injector	Radiator
11	Which earth-moving machine is used to compact soil and asphalt?	1	Compactor	Grader	Excavator	Loader
12	Which of the following is NOT a common application for air compressors?	4	Inflating tires	Air conditioning	Powering pneumatic tools	Generating electricity
13	The large machine used for digging and moving large amounts of earth, often used in mining, is called a:	1	Dragline	Skid steer	Grader	Dump truck
14	What is the purpose of an air receiver tank in an air compressor system?	1	To store compressed air and smooth out pressure fluctuations	To filter impurities from the compressed air	To cool the compressed air	To reduce noise from the compressor
15	Which component transfers the power from the engine to the wheels?	1	Transmission	Flywheel	Alternator	Starter motor
16	Which type of road roller is best suited for compacting cohesive soils, like clay?	2	Smooth drum roller	Vibratory roller	Pneumatic roller	Tandem roller
17	The part of the engine that prevents backflow of exhaust gases is called the:	3	Valve	Turbocharger	Muffler	Intake manifold
18	What is a key benefit of using a tandem roller for asphalt compaction?	3	High maneuverability	Ability to compact in narrow spaces	Uniform compaction with smooth finishes	Lower fuel consumption
19	Which machine is primarily used for moving material short distances on a job site?	1	Loader	Excavator	Grader	Roller

Sr. No.	Question	Correct Option	Option 1	Option 2	Option 3	Option 4
20	Which type of air compressor is characterized by a high-speed rotating impeller?	1	Centrifugal compressor	Reciprocating compressor	Rotary screw compressor	Scroll compressor
21	The part of the loader that is used to lift and carry material is known as the:	2	Boom	Bucket	Blade	Arm
22	The term "static pressure" in the context of road rollers refers to:	1	The pressure applied by the roller's drum without vibration	The engine pressure	The tire pressure of a pneumatic roller	The hydraulic pressure in the compaction system
23	What does the term "CFM" stand for in air compressors?	1	Cubic Feet per Minute	Compressed Flow Measurement	Cylinder Flow Metric	Compressed Feet per Minute
24	What is the purpose of the timing belt in an engine?	1	To maintain the correct timing between the crankshaft and camshaft	To filter the engine oil	To regulate fuel flow	To cool the engine
25	What is the main purpose of a skid steer loader?	3	Digging large trenches	Compacting soil	Performing a variety of tasks with different attachments	Grading large surfaces
26	Which air compressor component helps to reduce noise during operation?	1	Silencer	Air filter	Receiver tank	Regulator
27	Which component helps in reducing engine noise and emissions?	1	Catalytic converter	Radiator	Oil filter	Starter motor
28	Which type of road roller uses a series of interconnected drums to provide compaction?	3	Vibratory roller	Pneumatic roller	Tandem roller	Single drum roller
29	The device that controls the fuel-air mixture entering the engine is called the:	2	Fuel pump	Carburetor	Oil filter	Radiator
30	What feature on a road roller helps in maintaining the temperature of the asphalt during compaction?	3	Cooling fan	Heated drum	Water tank	Insulated drum

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31	What type of air compressor is typically used in automotive repair shops for short, intermittent tasks?	1	Reciprocating compressor	Rotary screw compressor	Centrifugal compressor	Scroll compressor
32	Which component of an excavator extends and retracts to adjust the reach of the machine?	3	Boom	Bucket	Stick	Counterweight
33	The part of a grader that shapes and levels the surface is called the:	1	Blade	Bucket	Rollers	Tracks
34	What is the primary advantage of a road roller with a "drum vibration" feature?	2	Increased speed of operation	Enhanced compaction efficiency	Reduced noise levels	Lower fuel consumption
35	What part of the engine connects the crankshaft to the wheels?	2	Transmission	Driveshaft	Flywheel	Camshaft
36	What safety device prevents overpressure in an air compressor system?	1	Pressure relief valve	Check valve	Air filter	Regulator
37	What type of earth-moving machinery is often used in road construction for leveling and smoothing the surface?	1	Grader	Dump truck	Bulldozer	Excavator
38	Which compressor type is known for having fewer moving parts and less maintenance?	3	Rotary screw compressor	Reciprocating compressor	Scroll compressor	Centrifugal compressor
39	Which engine component helps in reducing engine vibration?	1	Balancer shaft	Turbocharger	Oil filter	Spark plug
40	Which type of road roller is equipped with a large, smooth drum and is typically used for finishing work?	3	Pneumatic roller	Vibratory roller	Smooth drum roller	Tandem roller
41	The part of the compactor that applies pressure to the surface is called the:	1	Drum	Blade	Bucket	Track
42	The part that helps in starting the engine by cranking the crankshaft is known as the:	1	Starter motor	Alternator	Ignition coil	Fuel injector
43	The term "compaction" in road roller machinery refers to:	2	Increasing the volume of material	Reducing the volume of material by increasing density	Making the material wet	Mixing different materials together

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44	What is the primary purpose of an air compressor's oil separator?	1	To remove oil from the compressed air	To lubricate the compressor's internal parts	To cool the compressed air	To filter out particulates
45	Which engine part controls the intake and exhaust	2	Piston	Camshaft	Crankshaft	Connecting rod
46	Which machine is commonly used for digging and removing earth?	1	Excavator	Grader	Dump truck	Loader
47	Which type of air compressor uses a piston to compress air?	2	Rotary screw compressor	Reciprocating compressor	Centrifugal compressor	Scroll compressor
48	Which type of road roller uses a heavy cylindrical drum to compact surfaces?	3	Vibratory roller	Pneumatic roller	Smooth drum roller	Tandem roller
49	The engine part that ensures smooth power delivery and reduces jerks is called the:	1	Flywheel	Piston	Crankshaft	Camshaft
50	Which component of an air compressor regulates the output pressure of compressed air?	1	Regulator	Separator	Filter	Dryer
51	Which machine is used to remove stumps and roots from the ground?	1	Stump grinder	Loader	Excavator	Grader
52	Which type of road roller is known for its ability to compact asphalt efficiently while allowing for higher travel speeds?	1	Pneumatic roller	Vibratory roller	Smooth drum roller	Tandem roller
53	What is a common feature of a "portable" air compressor?	1	It is lightweight and can be moved easily	It has a large stationary tank	It operates at a lower pressure than stationary models	It is used for stationary, heavy-duty applications
54	What type of earth-moving machine uses a large rotating bucket to scoop and remove earth?	1	Dragline	Bulldozer	Excavator	Skid steer
55	What type of road roller is particularly suited for working on very uneven surfaces?	1	Pneumatic roller	Tandem roller	Vibratory roller	Single drum roller
56	Which part of the engine maintains the proper engine temperature?	1	Thermostat	Fuel injector	Alternator	Radiator
57	The part of a dump truck that tips up to unload material is called the:	1	Bed	Blade	Drum	Bucket

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58	The primary function of the "water spray system" on a road roller is to:	4	Prevent overheating of the engine	Clean the roller's drum	Keep the roller's tires from slipping	Reduce dust and keep the drum surface clean
59	What is the function of the oil filter in an engine?	1	To filter impurities from the engine oil	To filter air entering the engine	To remove exhaust gases	To cool the engine
60	What is the typical range of pressure for most industrial air compressors?	2	10-100 PSI	50-150 PSI	100-300 PSI	200-600 PSI
61	The device that converts the rotational motion of the crankshaft into mechanical work is known as the:	3	Generator	Turbocharger	Alternator	Flywheel
62	Which earth-moving machinery is used primarily for creating and maintaining ditches and drainage systems?	2	Excavator	Backhoe	Grader	Bulldozer
63	Which road roller type would be the best choice for compacting a newly laid asphalt surface?	4	Vibratory roller	Pneumatic roller	Smooth drum roller	Tandem roller
64	Which type of air compressor is typically used in large-scale industrial applications with a constant air demand?	1	Rotary screw compressor	Reciprocating compressor	Scroll compressor	Centrifugal compressor
65	In a road roller, the term "drum diameter" refers to:	4	The width of the drum	The height of the drum	The length of the drum	The size of the drum in cross-section
66	What type of machine is equipped with a large, flat blade for grading surfaces?	1	Grader	Loader	Excavator	Roller
67	Which component in an air compressor system is used to control the flow and pressure of air being delivered?	1	Regulator	Valve	Filter	Separator
68	Which engine component helps to manage the engine's idle speed?	1	Idle air control valve	Turbocharger	Oil pump	Exhaust manifold
69	What is a key feature of a "hydrostatic drive" in a modern road roller?	1	Provides smooth and efficient power transmission	Reduces the noise level of the engine	Improves fuel efficiency	Increases the weight of the roller

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70	What is one advantage of a centrifugal air compressor over a reciprocating compressor?	1	Higher efficiency at large flow rates	Lower initial cost	Easier maintenance	More compact size
71	What part of the engine compresses the air-fuel mixture in a diesel engine?	2	Turbocharger	Piston	Cylinder head	Fuel injector
72	Which machine is used for leveling and compacting asphalt and soil in road construction?	1	Roller	Backhoe	Excavator	Loader
73	The component that converts the chemical energy of fuel into mechanical energy is the:	2	Piston	Combustion chamber	Cylinder head	Crankshaft
74	What component of a bulldozer is used for raising and lowering the blade?	1	Hydraulic cylinders	Tracks	Bucket	Arm
75	Which earth-moving machine is designed for work in confined spaces?	1	Mini excavator	Bulldozer	Dump truck	Grader
76	Which part of the engine ensures that the fuel and air mixture is properly atomized?	1	Carburetor	Spark plug	Oil pump	Fuel filter
77	What is the primary use of a trenching machine?	1	Digging narrow trenches	Moving earth across long distances	Compacting soil	Leveling road surfaces
78	What part of the engine helps to reduce the noise from the exhaust gases?	1	Muffler	Catalytic converter	Radiator	Air filter
79	The engine component responsible for generating electrical power is called the:	1	Alternator	Starter motor	Ignition coil	Flywheel
80	Which machine uses a rotating drum to spread and compact material?	1	Roller	Grader	Excavator	Loader
81	The part of the excavator that provides stability during operation is called the:	3	Boom	Track	Counterweight	Bucket
82	The part that seals the combustion chamber to prevent leakage of gases is called the:	4	Cylinder head	Piston ring	Valve seat	Gasket
83	What is the primary advantage of a vibratory roller over a static roller?	2	Increased mobility	Better compaction efficiency	Lower operating cost	Simpler operation

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84	What type of air compressor is known for continuous operation and high efficiency?	2	Reciprocating compressor	Rotary screw compressor	Vane compressor	Diaphragm compressor
85	The part of a wheel loader that tilts the bucket is controlled by the:	1	Tilt cylinders	Boom	Arm	Tracks
86	What part of the engine prevents the engine oil from mixing with coolant?	4	Oil cooler	Cylinder head	Oil pump	Gasket
87	The part of the engine that maintains the proper flow of air into the combustion chamber is the:	1	Air filter	Radiator	Fuel pump	Camshaft
88	What type of machinery is typically used to clear snow from roads?	1	Snow plow	Excavator	Grader	Roller
89	Which component of a crawler excavator provides	1	Tracks	Bucket	Arm	Boom
90	Which engine part adjusts the amount of fuel injected into the combustion chamber?	1	Fuel injector	Carburetor	Oil pump	Starter motor
91	The machine designed for precision grading and leveling is known as a:	1	Grader	Loader	Bulldozer	Dump truck
92	What component in the engine controls the opening and closing of the intake and exhaust valves?	2	Timing belt	Camshaft	Crankshaft	Connecting rod
93	What is the main function of the hydraulic system in earth-moving machinery?	1	To power the movement of various components	To provide electrical power	To cool the engine	To regulate fuel flow
94	Which engine part is responsible for cooling the engine by removing heat from the coolant?	1	Radiator	Oil pump	Thermostat	Water pump
95	Which machine is equipped with a large, flat blade for pushing and leveling earth?	1	Bulldozer	Grader	Excavator	Loader
96	In a rotary screw compressor, what action is used to compress the air?	2	Sliding vane	Rotating screws	Piston movement	Centrifugal force
97	What is the primary purpose of a backhoe?	1	Excavating trenches and holes	Lifting heavy materials	Grading roads	Compaction of soil

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98	What type of road roller is equipped with tires for compaction?	1	Pneumatic roller	Smooth drum roller	Static roller	Tandem roller
99	Which component in the engine is responsible for providing a spark for combustion?	1	Spark plug	Fuel injector	Air filter	Timing belt
100	What is the function of the cylinder head in an engine?	3	To convert reciprocating motion to rotational motion	To control the engine's timing	To seal the combustion chamber and house the valves	To cool the engine
101	Which air compressor type is commonly used in applications requiring high flow rates and variable pressure?	3	Scroll compressor	Reciprocating compressor	Centrifugal compressor	Rotary vane compressor
102	Which machine is used to grade and level surfaces, especially in road construction?	1	Grader	Excavator	Bulldozer	Dump truck
103	Which road roller type is best suited for compacting granular soils?	3	Smooth drum roller	Vibratory roller	Pneumatic roller	Combination roller
104	The component that allows the wheel loader to scoop and lift materials is the:	2	Blade	Bucket	Arm	Track
105	The term "PSI" in air compressors stands for:	1	Pounds per Square Inch	Pressure per Square Inch	Pounds per Square Interval	Pressure Standard Index
106	The weight of the road roller is primarily used for:	3	Increasing speed	Improving visibility	Enhancing compaction	Reducing fuel consumption
107	What is the purpose of the connecting rod in an engine?	1	To connect the crankshaft to the piston	To regulate engine temperature	To filter the air entering the engine	To ignite the fuel-air mixture
108	The component that controls the flow of coolant through the engine is called the:	2	Water pump	Thermostat	Radiator	Oil pump
109	What component in an air compressor helps to remove moisture from the compressed air?	4	Air filter	Separator	Receiver tank	Dryer
110	What type of earth-moving machine uses a rotating drum to crush and grind materials?	1	Crusher	Roller	Grader	Loader

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111	Which type of road roller has two drums and is used for both smooth and rough compaction?	1	Tandem roller	Pneumatic roller	Single drum roller	Trench roller
112	What is the main function of the water tank in a road roller?	2	To provide cooling for the engine	To prevent dust from rising during operation	To increase the weight of the roller	To power hydraulic systems
113	Which part of the engine provides lubrication to the moving components?	3	Radiator	Fuel pump	Oil pump	Air filter
114	Which type of air compressor is most suitable for high-pressure applications?	2	Centrifugal compressor	Reciprocating compressor	Rotary screw compressor	Scroll compressor
115	Which type of excavator is mounted on a wheeled chassis rather than tracks?	2	Crawler excavator	Wheeled excavator	Mini excavator	Dragline excavator
116	The machine that transports loose material such as dirt, gravel, and sand is called a:	1	Dump truck	Backhoe	Bulldozer	Grader
117	What does a compressor's "duty cycle" refer to?	1	The total time the compressor can operate continuously without overheating	The frequency of maintenance required	The amount of compressed air produced per hour	The level of noise produced during operation
118	What part of the engine compresses the air-fuel mixture before combustion?	1	Piston	Cylinder head	Crankshaft	Valve
119	Which type of road roller is most commonly used in asphalt paving applications?	2	Pneumatic roller	Smooth drum roller	Vibratory roller	Tandem roller