

# Technical Test Theory

## Excavator 360 below 10 tonnes A58



No.	Question
1	According to legislation, when are check valves and a rated capacity or load moment indicator required?
2	If travelling with a load, name FIVE factors that must be taken into account by the operator before moving.
3	Before lowering into or moving a drag box into a trench, what trench-related checks must be made?
4	The safe working load (SWL) or working load limit (WLL) of a multi-leg chain sling only applies in what TWO conditions or configuration?
5	What effect can a swinging load have on an excavator?
6	If setting up to excavate in a confined area, name TWO things that should be taken into account before starting.
7	a) What determines the minimum distances that any part of plant and machinery has to be kept from over head electricity lines and b) explain why a distance should be kept.
8	Give THREE reasons why an oversize bucket should not be used when excavating trenches to specification.
9	If the machine is being travelled or working on the public highway, the Road Traffic Act applies. a) What type of licence and which class should the operator hold and b) what is the minimum age allowed?
10	If attaching accessories to a quick-hitch coupler, give TWO reasons why the coupler should be tilted in the downwards position (ram extended)?
11	Using the Operator's Manual, state the cold-starting procedure for the machine. Note: The Operator's Manual for the machine being used for the test MUST be available for reference by the candidate.
12	During work, the engine starts to overheat. Explain the danger if someone tries to remove the radiator or expansion tank cap.

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13	State the purpose of the check valve(s) located on the boom cylinder rams.
14	What THREE main duties of the Health and Safety at Work Act must employees follow?
15	Describe ONE physical method of checking that a bucket is fully secured to the quick-hitch coupler prior to work.
16	What factors determine the shoring requirements of a trench?
17	Using the lifting capacity diagram for A58: a) what is the maximum lifting capacity at a 4 m radius over the sides of the track with the load at a height of 1 m b) what effect does fitting a bucket have on the lifting capacity c) what effect does the dozer blade have on the lifting capacity?
18	What is the nearest distance allowed to gas pipes when excavating with the machine?
19	Why should long loads be lifted using a swivelling type lifting accessory?
20	Many smaller excavators have the ability to slew the boom (mounted on a king post) relative to the cab/upper structure. Give one application where this facility may be used.
21	If setting up to work in a pedestrianised area, state THREE factors that need to be taken into account.
22	What makes up the total (or gross) weight of a load that is to be lifted?
23	If the accessory attachment point is not part of the bucket, give TWO reasons why it should be removed.
24	Who determines the lifting/object handling capacity of the machine?

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25	Name THREE ways that a plant operator can contribute in ensuring repeat business with the client or principal contractor.
26	Why is it important that the bucket/attachment is lowered and the engine switched off before the operator exits the cab?
27	Why must the seat belt be worn, even with the cab door closed?
28	What particular and specific hazards can affect the stability of the machine when working on old industrial (brownfield) sites?
29	What needs to be inspected on a quick-hitch coupler if attaching lifting accessories for the lifting of slung loads?
30	a) What is the purpose of a Method Statement and b) what is required of the operator?
31	What is the purpose of the counterweight of the machine?
32	If a yellow-coloured marker tape is unearthed during excavating, which TWO types of services could this indicate?
33	Manufacturers' lifting or object handling capacity charts apply (in all known cases) when the machine is level. What is the effect if a load is lifted or travelled facing downhill on a downhill slope?
34	If the operator has to top-up the hydraulic oil, state TWO precautions to ensure cleanliness of the system.
35	What is regarded as the danger or hazard zone during a lifting operation?
36	When an object needs to be lifted on a site, what should be the first consideration of planning?

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37	Why should different soils be segregated during excavating?
38	If checking the oil level using a dipstick, why must gloves be worn?
39	The operator is asked to excavate a new trench. State FIVE different requirements that must be considered or implemented before work commences.
40	Cable avoidance tools (CATs) can detect a variety of buried services. What type of material do they have limitations in locating?
41	Why must excavator operators not begin to load vehicles until the forward-tipping dumper driver is clear of their machine?
42	If the load inadvertently or accidentally lands, what course of action should be taken?
43	On a semi-automatic quick-hitch bucket attaching system: a) what is the purpose of the safety pin and b) what checks MUST be made to the pin before use?
44	On both tracked and wheeled types: a) what differs between lifting over the side compared to over the front or the rear of the machine? b) Explain why.
45	What is the main purpose of the Rated Capacity Indicator (RCI) or Load Moment Indicator (LMI)?
46	What does the Health and Safety at Work Act require employers to do, specifically regarding plant?
47	Explain ALL visual checks that must be carried out on all types of quick-hitch bucket attaching systems before use.
48	If the excavator is carrying out deep excavating work using the full working range, what hazard may occur?

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49	The operator has to fit and use a new bucket using a quick-hitch coupler that they are unfamiliar with. What do Regulations (i.e. PUWER 98) and other guidance require the operator to have?
50	If the operator has loaded the machine onto a transporter/trailer on behalf of a driver, what checks must be carried out before they leave the cab?
51	Name FOUR different types or levels of disciplinary actions or sanctions that can be applied (by employers and judicial bodies) to operators of plant who do not comply with, or follow legislation and regulations.
52	Before manually changing any bucket: a) where should the bucket be positioned (in relation to the ground) before removing the final pin and b) explain why?
53	Name TWO types of equipment used to ensure that excavation levels, measurements and positions are to the required specification.
54	Using the operator's manual, state the figure for setting track tension. For wheeled units, state the tyres' operating pressure. Note: The operator's manual for the machine being used for the test must be available for reference by the candidate.
55	Describe TWO actions to be taken for an open trench at the end of a working day.
56	Name THREE ways in which an operator can minimise their impact upon the environment whilst using the machine.
57	What information does the 'dig-envelope' (also known as 'working range') chart give? (Candidates may be shown a copy of a chart.)
58	When must a signaller be used before moving an excavator?
59	What is meant by zero-tail swing excavators?
60	The operator has been asked to drive the machine onto a transporter/trailer. a) Who is responsible for the loading operations and b) state FOUR actions to be considered by the operator before loading commences?

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61	In what situation does a hard hat NOT need to be worn when operating a 360 excavator?
62	Before leaving the cab for a rest break, after parking and switching off the machine, what final action must be carried out?
63	What is the purpose of a risk assessment?
64	When parking the machine at the end of the shift, name THREE places where the machine should not be parked.
65	List SIX typical subject areas that should be covered in a site induction.
66	If a trench has a depth of 2 metres: a) What is the minimum distance to maintain from the edge of the trench when placing spoil and b) explain why?
67	What is the definition of, or how can a hazard be described?
68	Which parts of the machine is the radius (for lifting) measured from?
69	With regards to lifting accessories, irrespective of who supplied the accessories, what THREE factors should be ensured before the accessories are used?
70	If the machine's rated capacity/object handling capacity chart is not available for reference, what other method can be used to determine the machine's lifting capacity?
71	When slewing with a load, where should the operator be looking?

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72	Give FOUR reasons that may cause the machine to tip over (forwards and/or sideways).
73	What is the meaning of this hand signal (being demonstrated by the tester)?
74	Accessories must only be attached to manufacturers' approved lifting points. Explain THREE possible consequences if the recommendations are not followed.
75	Why must the controls be isolated before each load can be attached or disconnected by the slinger?
76	Give TWO reasons why, wherever possible, operators should excavate the ground in layers.
77	Where should the excavator's operator's manual be kept and why?
78	Explain the purpose of a lift plan.
79	Why are plant operators generally regarded as 'safety-critical' workers?
80	When working in a confined area or space: a) what danger can be present with regards to the counterweight of the machine, b) when should measures be taken and c) what measures should be implemented?
81	What are the possible outcomes of facing prosecution for not complying with legislation and regulations?
82	Apart from the operator, who else may need to use the machine's Operator's Manual?
83	What is the purpose of a roll or ROPS frame?

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84	If a hook is fitted to the machine for lifting purposes, what must be checked before use?
85	Why should an excavator be re-fuelled at the end of the day?
86	How can a qualification or card benefit a plant operator?
87	If both travel levers (or travel pedal for wheeled machines) are pushed forwards when the track motors (or driving wheels) are in front of the cab, in which direction would the machine move?