# Myfuture CBC Revision

# power mechanics - Grade 10

Question Paper

1. What is the purpose of a vehicle's exhaust muffler?

A. Store electrical charge for the battery

B. Increase the car's fuel tank capacity

C. Reduce the noise produced by exhaust gases

D. Improve the tyre's tread life

2. In drawing tangents to a circle using the compass method, why do we often draw an auxiliary circle or arc?

A. To colour the drawing

B. To locate intersection points that help construct the tangent lines accurately

C. To erase the original circle

D. To make the circle larger for no reason

3. Which career is most directly related to Power Mechanics at the technical level?

A. Primary school teacher

B. Heavy equipment mechanic or diesel technician

C. Clinical psychologist

D. Graphic designer

4. What is the correct first step before removing a wheel from a parked vehicle?

A. Start the engine to use power steering

B. Remove all tyres from the vehicle

C. Deflate the tyre completely

D. Apply the parking brake and chock the opposite wheels

5. A blueprint title block lists the scale as "Not to scale". What does this mean?

A. Dimensions must be taken from the given measurements, not by scaling the drawing

B. The drawing uses both metric and imperial units

C. The drawing is at an unknown standard scale like 1:50

D. The drawing is at full size (1:1)

6. Which sign indicates that hearing protection must be worn in a certain area?

A. A symbol of ear defenders or an ear with sound waves and the words 'hearing protection

B. A green first aid cross

C. A picture of a fire extinguisher

D. A sign that says 'no food allowed'

7. What is an advantage of a water-cooled engine compared to an air-cooled engine?

A. Water-cooled engines regulate temperature more evenly, allowing better performance and

B. Water-cooled engines do not need any lubrication

C. Water-cooled engines are lighter and have no radiator

D. Water-cooled engines never need maintenance

8. What does the tyre marking 175/70 R14 tell you?

A. Tyre pressure 175 kPa, tread depth 70 mm, rim type R14

B. Maximum speed 175 km/h, 70 kg load index, rim size 14 mm

C. Tyre width 175 cm, rim diameter 70 inches, radial tyre, 14 ply

D. Tyre width is 175 mm, aspect ratio 70%, radial construction, rim diameter 14 inches

9. Which of these is a common method used to protect car body panels from rust?

A. Keeping windows open all the time

B. Removing paint to let metal breathe

C. Drilling holes in panels

D. Applying anti-corrosion coatings and keeping paint intact

10. Which unit is commonly used in Kenyan schools to measure mechanical power?

A. Degrees Celsius

B. Litres per minute

C. Kilograms per square centimetre

D. Kilowatt

11. What is the main purpose of piston rings in an engine?

A. To seal the gap between piston and cylinder to prevent gas leakage
B. To cool the engine by circulating coolant

C. To start the engine during cold mornings

D. To detect engine misfires

12. An illustration used in class shows a four-stroke engine with timing marks on the crankshaft and camshaft. What is the purpose of these timing marks?

A. To measure oil level in the sump

B. To indicate the fuel grade to use

C. To align crankshaft and camshaft so valves open at correct times
D. To show where to place the spark plug gap

13. On a drawing at scale 1:50, a pipe length measures 8 cm. What is the actual length in metres?

A. 400 m

B. 4 m

C. 40 m

D. 0.16 m

14. What is the main difference between a live axle and a dead axle?

A. A live axle cannot be used on four-wheel drive vehicles

B. A live axle is only used on motorcycles and a dead axle on cars
C. A live axle transmits driving torque to the wheels while a dead axle only supports the
D. A live axle is always made of aluminium and a dead axle is made of steel

15. Which classroom drawing best explains why two-stroke engines tend to make more noise than four-stroke engines?

A. Diagram showing larger muffler on two-stroke engines

B. Drawing showing power strokes each revolution and overlapping intake/exhaust
C. Chart of tyre pressure

D. Picture of a car driving quietly

16. What effect does over-inflation of a tyre have on vehicle handling and tyre wear?

A. It guarantees better fuel economy always

B. It reduces the contact patch causing harsher ride and greater centre tread wear
C. It permanently increases tyre size without consequences

D. It makes the vehicle float and improves cornering permanently

17. Which of these is the correct way to lift a heavy object safely?

A. Bend your knees, keep your back straight and lift with your legs
B. Twist your body while lifting to save time

C. Lift quickly using only your arms

D. Keep your legs straight and bend your back to lift

18. Which chassis type is most commonly used on Kenyan matatus and pickups?

A. Tubular backbone with no cross members

B. Monocoque (unibody)

C. Ladder frame

D. Space frame

19. If a general arrangement drawing is at 1:200 and a detail view is at 1:2, how do the sizes of the detail compare to the general arrangement?

A. The detail is smaller on paper than the general arrangement
B. The detail is much larger on paper than the same area in the general arrangement
C. They are the same size on paper

D. The general arrangement is an enlargement of the detail

20. What is the main difference between an internal combustion engine and an external combustion engine?

A. Internal combustion burns fuel inside the engine cylinder while external combustion
B. Internal combustion cools the engine with air while external combustion uses water
C. Internal combustion uses steam while external combustion uses petrol
D. Internal combustion always uses electricity while external combustion uses fuel

21. What does the tyre load index number indicate?

A. The tyre's age in months

B. The maximum load capacity the tyre can carry at the specified pressure

C. The tyre's fuel efficiency grade

D. The recommended wheel alignment setting

22. What is the main reason petrol engines have lower compression ratios than diesel engines?

A. To avoid premature ignition (knocking) of the air–fuel mixture

B. Because petrol engines always run on diesel too

C. To make engines heavier

D. Because petrol evaporates at higher temperatures

23. What is the primary function of a vehicle gearbox when climbing a steep hill?

A. Provide higher torque by selecting a lower gear

B. Fill the tyres with extra air

C. Turn off the engine automatically

D. Heat the cabin faster

24. What is the Otto cycle associated with?

A. Steam turbines in power plants

B. Compression-ignition (diesel) engines

C. Spark-ignition (petrol) four-stroke engines

D. Electric motors used in trains

25. Why is good lighting important over workbenches and machine areas?

A. So workers can sleep during breaks

B. To use more electricity for billing purposes

C. To heat the workshop in cold weather

D. To ensure accuracy, reduce eye strain and prevent accidents

26. How many piston strokes complete a full cycle in a two-stroke engine?

A. Two strokes — one up and one down

B. One stroke only

C. Four strokes — two up and two down

D. Three strokes — two up and one down

27. What is the main difference between tubeless and tube tyres?

A. Tube tyres are always larger in diameter

B. Tubeless tyres do not require an inner tube; tubed tyres do

C. Tubeless tyres cannot be balanced

D. Tubeless tyres need wooden spokes

28. Before starting maintenance on a machine you should always:

A. Disconnect tools only after finishing work

B. Turn it off and leave it as is

C. Hold down the start button while working

D. Isolate and lock out the energy source (lockout-tagout) and ensure the machine cannot

29. Which sequence lists the four strokes of a four-stroke petrol engine in the correct order?

A. Power, intake, exhaust, compression

B. Intake, compression, power (combustion), exhaust

C. Exhaust, power, compression, intake

D. Compression, exhaust, intake, power

30. Which is the primary function of a motor vehicle chassis?

A. To support the vehicle's weight and provide mounting points for components

B. To make the vehicle's paint shine

C. To store extra fuel for long trips

D. To control the engine's ignition timing

31. What is the headliner in a car?

A. A metal brace under the engine

B. The rubber strip around the windscreen

C. The material covering the inside roof of the passenger compartment

D. The outermost layer of paint

32. Why do technicians inspect welds and joints after joining vehicle panels?

A. To ensure welds are strong, continuous and free from defects like cracks or voids

B. To reduce the weight of the vehicle

C. To change the paint to a better colour

D. To make the job take longer

33. Which condition most commonly causes uneven tyre wear on the inner or outer edge?

A. Low engine oil

B. Incorrect wheel alignment

C. Weak headlights

D. Dirty windscreen

34. What is the main purpose of a vehicle's transmission (gearbox)?

A. To change gear ratios so the engine can drive wheels efficiently
B. To store fuel for long journeys

C. To measure tyre pressure

D. To cool the engine when hot

35. Which fuel system component was widely used on older petrol engines but has largely been replaced by fuel injection in modern vehicles?

A. Carburettor

B. Glow plug

C. Compression chamber

D. Turbocharger

36. Which maintenance practice helps prevent corrosion of the chassis in Kenya's rainy and coastal areas?

A. Regular washing and application of anti-rust treatments

B. Adding sand to the fuel tank

C. Using only premium unleaded petrol

D. Painting tyres with oil

37. Which engine type often mixes oil with the petrol for lubrication rather than having a separate oil sump?

A. Electric motor

B. Two-stroke petrol engine

C. Diesel engine

D. Four-stroke petrol engine

38. What is the main purpose of wheel balancing?

A. To eliminate vibrations by making the wheel and tyre assembly have even weight
B. To change the tyre compound for better grip

C. To permanently increase tyre tread depth

D. To align wheel camber automatically

39. Looking at a training poster of an engine cycle, which visual detail indicates the moment of maximum pressure in the cylinder for a four-stroke petrol engine?

A. Piston at top dead centre immediately after ignition

B. Crankcase venting diagram highlighted

C. Valves fully open during exhaust

D. Piston at bottom dead centre right after intake

40. Which type of engine uses a spark plug to ignite the air-fuel mixture?

A. Petrol (gasoline) engine

B. Electric motor

C. Diesel engine

D. Steam engine

41. Which part of the vehicle body is called the bonnet in Kenya?

A. The cover over the engine at the front

B. The panel between the wheel and the door

C. The part covering the passenger floor

D. The rear storage compartment

42. Which instrument would you use to mark equal offsets while creating a parallel blended curve?

A. Set square

B. French curve

C. Protractor

D. Compasses

43. When blending a curve to meet a straight line at a point, what condition ensures a smooth meet?

A. The curve must have the same tangent direction as the line at the meeting point
B. The curve must be a circle

C. The curve must end a long distance from the line

D. The curve must cross the line at 90 degrees

44. What is the primary purpose of a hubcap or wheel cover?

A. To automatically adjust tyre pressure

B. To reduce engine oil consumption

C. To change the tyre's load index

D. To improve appearance and protect the wheel nuts and hub from dirt

45. What role does an oil drain and collection area play in workshop layout?

A. A decorative pond to attract wildlife

B. A safe place to collect and store oil for recycling and disposal
C. It is an area to wash hands with oil

D. A place to dump city waste

46. What tool is normally used to loosen wheel nuts before lifting the vehicle?

A. Oil filter wrench

B. Screwdriver

C. Wheel wrench (lug wrench)

D. Hammer

47. What is panel beating in vehicle bodywork?

A. Replacing brake pads

B. Painting the tyres

C. A method to tighten the engine bolts

D. Repairing and reshaping damaged body panels after dents or crashes

48. What is the recommended action for tyres that have tread depth below the legal or safe limit?

A. Replace the tyres immediately

B. Paint the tread to hide the wear

C. Only rotate them and keep using

D. Drive faster to reduce wear evenly

49. Which of these is the correct way to write a metric drawing scale for a half-size reduction?

A. 1:0.5

B. 2:1

C. 1/2 cm = 1 m

D. 1:2

50. Which pillar of a car is the vertical support between the front and rear doors?

A. A-pillar

B. B-pillar

C. D-pillar

D. C-pillar