Myfuture CBC Revision

power mechanics - Grade 10

Question Paper

1. How should tyre pressure be checked for the most accurate reading?

A. By pressing the tyre with your hand

B. Right after driving at high speed

C. By looking at the tyre tread

D. With a tyre pressure gauge when the tyres are cold (before driving)

2. Why might a manufacturer use aluminium in parts of the chassis?

A. To change the engine type from petrol to diesel

B. To reduce vehicle weight and improve fuel economy

C. To make the vehicle softer for passengers

D. To make the chassis more likely to rust quickly

3. What is the common effect of driving with tyre pressure that is too low?

A. Less tyre noise at high speed

B. Shorter stopping distance on wet roads

C. Increased fuel consumption and faster tyre wear

D. Improved cornering precision

4. What can happen if wheel nuts are too loose?

A. The radio will stop working

B. The wheel may wobble or come off while driving

C. The headlights will go out

D. The engine oil will leak

5. Why should wheel nuts be re-checked (re-torqued) after a short distance of driving following a wheel change?

A. Because the wheel may settle on the hub and nuts can loosen slightly, so re-torquing ensures
B. Because the wheel will shrink and need retightening

C. Because tyre air pressure will automatically double during the first few kilometres
D. Because wheel nuts are designed to loosen by law

6. What is the primary role of a carburettor in older petrol vehicles?

A. To filter engine oil

B. To compress the air-fuel mixture to ignite it

C. To act as the battery for the vehicle

D. To mix air and petrol in the correct ratio before entering the cylinder

7. Why is engine lubrication important?

A. To improve the flavour of the fuel

B. To make the engine heavier

C. To block the fuel injectors

D. To reduce friction and wear between moving parts and help remove heat

8. Where should a fire extinguisher be placed in a power mechanics workshop?

A. At easily accessible points near exits and high-risk areas

B. Only in the office to avoid interference

C. Next to combustible materials to use quickly

D. Behind large machines where it is hidden

9. Which stroke in a four-stroke engine produces the mechanical work that turns the crankshaft?

A. Power (expansion) stroke

B. Exhaust stroke

C. Compression stroke

D. Intake stroke

10. What is meant by the track width of a vehicle?

A. The width of the steering wheel

B. The distance from front bumper to rear bumper

C. The distance between the left and right wheels on the same axle
D. The height of the tyres

11. What is the main advantage of tubeless tyres over tube-type tyres?

A. They never get punctures

B. They are always cheaper

C. They do not require air pressure

D. They are less likely to blow out suddenly and can be repaired more easily

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

A. Three strokes — two up and one down

B. Two strokes — one up and one down

C. Four strokes — two up and two down

D. One stroke only

13. Which clothing is unsafe in the workshop?

A. Well-fitted coveralls and safety boots

B. Short hair tied back or hair net

C. Loose-fitting clothes, jewellery and long hanging sleeves

D. Gloves suitable for the task

14. How should waste oil and used chemicals be handled in a workshop?

A. Poured down the workshop drain to save time

B. Burned on an open ground to remove it

C. Left in open drums near work areas

D. Collected in labelled containers and disposed of according to regulations

15. What is a wheel arch (wheel well) on the vehicle body?

A. The place where fuel is added

B. A decoration used only in racing cars

C. The curved panel around the tyre opening that protects the body from spray

D. A device to change gears

16. Where should compressed air lines be run in a workshop layout?

A. Across the floor where workers walk

B. Along ceilings or walls, secured and away from heat sources

C. Left loose near benches for easy grabbing

D. Buried inside wooden flooring

17. Why is it important to have a designated cleaning and maintenance area in the workshop?

A. So equipment can be ignored and left dirty

B. To increase clutter near machines

C. To store everyone’s lunch boxes

D. To perform routine upkeep, keep tools clean and extend equipment life

18. Which safety system helps prevent wheels from locking during heavy braking and improves steering control?

A. Anti-lock Braking System (ABS)

B. Turbocharger

C. Oil filter

D. Catalytic converter

19. What is the purpose of the chassis number or vehicle identification number (VIN)?

A. To tune the radio automatically

B. To tell the driver how much fuel is left

C. To uniquely identify the vehicle for registration and history checks

D. To measure tyre pressure

20. How should workshop entrances be designed to suit a Kenyan school workshop environment?

A. With no doors to save costs

B. Wide enough for equipment and supplies, with ramps if needed and secure doors

C. They should be narrow and hard to access

D. Only accessible through windows

21. If you copy a drawing and the copy is 150% of the original size, how must you adjust measured lengths before using the original scale 1:50?

A. No adjustment is needed

B. Use scale 1:75 instead without measuring

C. Divide measured lengths on the copy by 1.5, then apply the scale

D. Multiply measured lengths on the copy by 1.5, then apply the scale

22. In a rear-wheel drive vehicle, which axle delivers engine power to the road?

A. Steering axle

B. Front axle

C. Accessory axle

D. Rear axle

23. What is the vehicle chassis?

A. All the glass and windows of the vehicle

B. Just the steering wheel and column

C. Only the engine and transmission assembly

D. The main frame that supports the vehicle's engine, body and other components

24. Which is the best immediate action to protect small paint chips on a car from rusting?

A. Leave the car in the sun with windows open

B. Ignore them because they will vanish

C. Scrape the surrounding paint off to expose more metal

D. Cover the chip with touch-up paint or a rust inhibitor quickly

25. If two curves meet and have matching tangents but different curvature values, what continuity do they have?

A. G2 continuity

B. G1 continuity

C. No continuity at all

D. G0 continuity

26. What is the purpose of the vehicle firewall (bulkhead) between the engine bay and passenger compartment?

A. To change the radio stations

B. To lock the doors automatically

C. To help the engine get more air

D. To reduce noise, heat and prevent fumes or fire from entering the cabin

27. What is the correct way to tighten wheel nuts when fitting a wheel?

A. Tighten only one nut and drive a short distance

B. Leave nuts finger-tight only

C. Tighten in a star or crisscross pattern to seat the wheel evenly

D. Tighten each nut fully in clockwise order around the wheel

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

A. Tubeless tyres need wooden spokes

B. Tubeless tyres cannot be balanced

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

D. Tube tyres are always larger in diameter

29. Which tool is commonly used to loosen or tighten wheel nuts when changing a tyre?

A. Lug wrench (wheel spanner)

B. Flat-blade screwdriver

C. Oil filter wrench

D. Spark plug socket

30. What is an engine?

A. A component that only cools the vehicle

B. A machine that stores electrical energy for later use

C. A tool used only to transmit power without changing energy form

D. A device that converts chemical energy from fuel into mechanical energy

31. 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. The general arrangement is an enlargement of the detail

D. They are the same size on paper

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

A. To measure tyre pressure

B. To change gear ratios so the engine can drive wheels efficiently

C. To store fuel for long journeys

D. To cool the engine when hot

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

A. Paint the tread to hide the wear

B. Only rotate them and keep using

C. Replace the tyres immediately

D. Drive faster to reduce wear evenly

34. On an electrical layout for a generator room, which scale notation is most commonly used in Kenya (metric system)?

A. 1 ft : 1 ft

B. 1:100

C. 1 in : 1 in

D. 1" : 1' (imperial)

35. What does wheel alignment adjust on a vehicle?

A. The engine timing

B. The angles of the wheels (toe, camber and caster)

C. The battery charge level

D. The tyre rubber compound

36. What is the purpose of the flywheel attached to an engine?

A. To mix oil with fuel

B. To directly pump coolant

C. To filter incoming air before combustion

D. To smooth out engine speed variations and store rotational energy

37. Which valve type is most commonly used on car tyres for inflation and pressure checks?

A. Presta valve

B. Bayonet valve

C. Schrader valve

D. Needle valve

38. When teaching with illustrations about timing, what does 'TDC' stand for and why is it important?

A. Torque Delivery Cycle, a specific stroke

B. Total Drive Capacity, how much power the engine has

C. Top Dead Centre, the piston position where many timing events occur

D. Thermal Dissipation Constant, for cooling design

39. Which parts absorb road shocks before they reach the vehicle body?

A. Springs and dampers (shock absorbers)

B. Headlight bulbs

C. Car battery and alternator

D. Air filter and oil filter

40. What driving symptom usually indicates a wheel is out of balance?

A. Headlights dimming while driving

B. Sudden loss of engine power

C. Vibration in the steering wheel or seat at certain speeds

D. Doors not closing properly

41. Which tool is commonly used to remove factory spot welds when replacing a damaged body panel?

A. Spot-weld cutter (or drill)

B. Rivet gun

C. Soldering iron

D. MIG welding torch

42. Which scale is best when you want to show small details larger for clarity (enlargement)?

A. 1:100

B. 5:1

C. 1:1

D. 1:5

43. In technical drawings, the term 'point of contact' between a circle and a tangent refers to:

A. The point farthest from the circle centre

B. The centre of the circle

C. The single point where they meet

D. The entire line segment inside the circle

44. How much space should generally be left around machines for safe operation and maintenance?

A. A small gap of 5 cm is sufficient

B. Only space for decorative items

C. Enough clear space to move, operate and maintain the machine safely

D. No space is needed; machines can be placed tightly

45. If a line is tangent to a circle at point T and you know the coordinates of the centre O and T, how can you find the tangent direction vector?

A. Take a vector twice OT

B. Use the vector from O to the origin

C. Use the same vector as OT

D. Take a vector perpendicular to OT

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

A. Compasses

B. Protractor

C. French curve

D. Set square

47. Which brake system component stores hydraulic pressure and helps maintain braking force in power-assisted brakes?

A. Oil pan

B. Exhaust manifold

C. Alternator

D. Brake master cylinder (and brake booster in power brakes)

48. What is the role of bushes (bushings) in suspension and steering linkages?

A. To increase tyre pressure automatically

B. To pump brake fluid through the lines

C. To cool down the engine oil

D. To provide flexible cushioning and reduce metal-to-metal contact

49. Which fuel is most commonly used in family petrol cars in Kenya?

A. Coal dust

B. Biogas

C. Kerosene

D. Petrol (gasoline)

50. Which part of the wheel holds and seals the tyre to the rim on modern cars?

A. Wheel nut

B. Spoke

C. Hub cap

D. Bead