

PRESIDENTS OFFICE
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT
KARATU SECONDARY SCHOOL
FORM FIVE & SIX CBA - AGRICULTURE TWO

COVID-19 HOLIDAY
ASSIGNMENT

NB: THIS ASSIGNMENT SHOULD BE SUBMITTED SOON AFTER OPENING THE SCHOOL

1. (a) I. State the four metal forming process.
 ii. What are the four advantages of forging in the farm workshop?
(b) Give seven advantages and seven disadvantages of welding.
(c) Explain the use of each of the following
 - I. Cross-Cut saw
 - ii. Rip saw
 - iii. Tenon saw
 - iv. Dovetail saw
2. (a) Give three reasons on why farmers use tools and equipment's.
(b) Define the following terms
 - I. Riveting
 - ii. Soldering
 - iii. Welding
 - iv. Hack sawing
(c) Differentiate the use of;
 - I. Riveting machines from hand drills and bit
 - ii. Spoke shave from files
 - iii. Wood chisel from Cold chisel
 - iv. Try square from Mason's square
 - v. Pipe cutter from pipe wrench
(d) I. What is the importance of forging?
 ii. Name four equipment's which assist in forging.
3. (a) i. Distinguish between active and passive fluxes as used in soldering and give one example in each.
 ii. State the function of the following
 - a. Masonry line
 - b. Masonry brush
 - c. Masonry jointer
 - d. Bushing
(b) i. Explain two ways by which an Acetylene gas cylinder can be distinguished from an Oxygen gas cylinder in welding.
 ii. Explain how to harden and temper a cold chisel in a workshop
(c) i. Sketch and give the functions of the following forging tools
 - a. Filler
 - b. Flatter
 ii. What is Riveting? Sketch the following rivet heads

- a. Pan head
- b. Flat head
- c. Counter sunk head.

4. (a) I. Briefly explain four considerations of how a good farm workshop should be.
- ii. Why it is important to observe safety measures in a farm workshop? Give two reasons.
 - iii. State three safety measures to be observed when working with sharp edged workshop tools.
- (b) Differentiate the following terms
- i. Plumbing and Masonry
 - ii. Arc welding and Gas welding
 - iii. Soldering and Forging
- (c) State the use of the following workshop tools
- i. Bradawl
 - ii. Mallet
 - iii. G clamp
 - iv. Calliper
 - v. Try square
5. (a) Safety precautions in and around the workshop are necessary in order to protect both the workers, equipment's and building.
- i. Briefly explain four safety precautions that can be used in a workshop
 - ii. Give four measures on clothing and safety precautions
 - iii. Suggest four house keeping measures to use in a workshop
- (b) Given the following plumbing tools, draw and state their use in a workshop
- i. Coupling
 - ii. Nipple
 - iii. Tee
 - iv. Reducer
6. (a) Name seven controls of a farm tractor and state their functions
- (b) Suggest five conditions for successful use of a farm tractor
- (c) i. Explain briefly three ways of caring and maintaining farm hand tools
- ii. Briefly explain five advantages of using animal power over tractor power.
7. (a) Outline the role played by each of the following components in an internal combustion engine
- i. Cylinder head
 - ii. Piston rings
 - iii. Engine block
 - iv. Oil reservoir
 - v. Exhaust valve
 - vi. Cylinder
- (b) Define
- i. Piston displacement (PD)
 - ii. Clearance volume (CV)
 - iii. Compression ratio (CR)
- (c) Find the Piston displacement and compression ratio of an engine with 8.0 cm bore, 7.5 cm stroke and 8.0 cm³ clearance volume.
- (d) Differentiate
- i. Firing order from firing interval
 - ii. Forced feed lubrication from splash feed lubrication

8. (a) Give the function of the following engine parts
- i. Rod bearing
 - ii. Oil pump
 - iii. Head gasket
 - iv. Intake manifold
- (b) Give the functions of the following cooling parts of the engine
- i. Thermostat
 - ii. Fan belt
 - iii. Radiator fins
 - iv. Radiator
- (c) How soot is formed in diesel engine?
- (d) Describe how the ignition system of a petrol engine tractor works.

9. (a) What is the function of the following in the tractor engine?
- i. Clutch
 - ii. Camshaft
- (b) What are the functions of the following in tractor engine?
- i. Injector nozzle
 - ii. Throttle lever
 - iii. Gear lever
 - iv. Starter switch
 - v. Brake pedals
 - vi. Steering wheel
 - vii. Hand brake

- (c) i. Can a petrol engine run without a battery? Give a reason to support your arguments.
- ii. Before starting the tractor for the day work, main parts of a tractor need daily attention in tabular form summarize five Operations

TRACTOR PART	CHECKING PROCEDURE
1.	
2.	
3.	
4.	
5.	

10. (a) i. Why it is desirable to keep pre-cleaner of a tractor free of trash?
- ii. Briefly explain the effect of how oil level in the reservoir of an air cleaner of a tractor which is running and working in the field
- (b) Outline any four advantages and four disadvantages of using animals as a source of power in the farm
- (c) i. A tractor was found to stop suddenly. State two possible causes for the faults and briefly describe two measures that can be taken to correct the faults.
- ii. The tractor engine is four stroke engine. Elaborate four advantages and two disadvantages of

four stroke engines.

(d) Briefly describe the maintenance of the ignition system of the tractor

11. (a) i. What is the difference between Primary and Secondary Tillage?
ii. State five objectives of tillage
iii. Briefly describe three ways of maintaining tillage implements after day works.
(b) i. Explain the use of five implements attached to the tractor at three points
ii. Briefly explain five operational differences between disc plough and Mould board plough
12. (a) Below is a diagram of a farm implements
i. State the use of the implement shown above
ii. Name the parts labeled A, B, C and D
iii. State two methods of increasing the depth of penetration of the implements.
(b) i. Explain how fertilizer application and weed control can be carried out mechanically
ii. State seven limitations of Agriculture mechanization in Tanzania.
13. (a) i. Give two uses of Ox drawn fine harrow
ii. Name the role of the following parts of Mould board plough
a. Share
b. Mould board
c. Landslide
(b) i. State three advantages of disc plough over mould board plough
ii. State five maintenance practices of mould board plough.
(c) i. Name five parts of the row planter and explain briefly the functions of each parts
ii. Outline the procedures of seed drill calibrations
14. (a) i. Distinguish between the Disc angle and Tilt angle of the disc plough
ii. What is the effect of increasing the tilt angle on plough disc penetration
(b) State the effect of ploughing speed on the following
i. Disc penetration
ii. Drought
(c) Briefly give the function of each of the following parts of mould board plough
i. Share
ii. Mould board
iii. Landslide
iv. Frog
v. Disc coulter
15. (a) i. What is meant by the following
a. Disc angle
b. Tilt angle
c. Forage harvester
d. Baler
(b) Explain briefly what will be the effect of the following in farm cultivation
i. Increasing disc angle
ii. Increasing Tilt angle
(c) In calibrating ground wheel row planter, 0.0297kg of seed was collected after 20 wheel turn.
i. If the planter is filled with two hoppers 90cm apart and intra-row spacing of 30cm. calculate amount of seed needed per hectare using the same planter the wheel diameter is 21cm.
ii. Find the distance covered by this planter in planting a hectare.

16. (a) i. State two things which can cause Irrigation schemes not to be successful.
ii. Account for six factors you would consider for starting an irrigation project in your school.
- (b) In each of the following methods of irrigation, briefly describe two Pre-requisite conditions for their use
- Sprinkler irrigation
 - Basin irrigation
 - Trickle irrigation
- (c) Give two advantages and two disadvantages in each of the irrigation methods named in 2(b) above.
17. (a) i. Differentiate between Irrigation and Drainage
ii. Explain seven roles of Irrigation in crop production.
- (b) Briefly describe five Irrigation methods that could be used by farmers to Irrigate their crops.
18. (a) i. Define the term water Conveyance efficiency as applied in irrigation.
ii. State two factors that determine frequency with which water for irrigation must be applied.
iii. Outline three circumstances which necessitate application for irrigation
- (b) Give four advantages and four disadvantages of overhead irrigation.
- (c) i. Enumerate six reasons why drainage is vital to the production of crops.
ii. Suggest any four of land which need drainage.
- (d) During irrigation, some crops may suffer water logging. State five factors which influence water logging in the soil.
19. (a) Describe the mechanism of the following
- Drip irrigation
 - Basin irrigation
- (b) Elaborate the difference you would expect in root systems of crops which have been irrigated by widely spaced heavy irrigation and frequently light irrigation.
- (c) i. Describe the three important sources of water for irrigation and briefly explain how they can be available to crop for growth.
ii. Account for this situations that necessitate irrigation
- (d) i. State two considerations to observe when water is applied from sprinkler.
ii. Why it is advised sprinkling to be carried t night and free from periods of high wind?
20. (a) Analyze five importance of irrigation
(b) Outline eight uses of water on the farm
(c) State six disadvantages of overhead irrigation
(d) Briefly explain four conditions necessary for surface irrigation
(e) Explain four agricultural practices that lead to pollution of water sources for irrigation

21. A crush, Dip and spray race are among the structures that are found on farms rearing livestock.
- (a) Describe the makeup of the following
 - i. A crush
 - ii. A dip
 - (b) i. State ten routine management practices that are carried out in the crush.
ii. Outline the function of each of the five parts of a spray race
 - (c) Why is it more advantageous to use spray race than a Dip in controlling ticks?
22. (a) i. Outline four advantages of post and rail fences.
ii. What are the limitations of timber fences. Give at least four.
- (b) The draining race is built to return excess dip wash to the dipping tank. Such a function is sufficiently done if the drainage race is having five features. Mention them.
- (c) i. What are the qualities of a good feed trough? State six qualities
ii. Mention two components of rabbit housing structures.
23. (a) What is farm building?
- (b) i. Briefly describe ten parts of a plunge dip
ii. Outline three advantages and three disadvantages of using a plunge dip for tick control.
- (c) Assume you are about to build a deep litter house as a part of farm building in your poultry project, Briefly explain six structural requirements you will consider.
24. (a) What is farm structure?
- (b) Briefly explain seven factors to be considered when selecting a site for farm structure.
- (c) State six factors which are used to determine the type of material used for wall construction.
- (d) Briefly describe the following methods of timber treatments by chemicals
 - i. Sap displacement method
 - ii. Pressure or vacuum treatment
 - iii. Hot or cold soaking
- (e) Briefly explain three structural requirements of farm stores.
25. (a) explain three main factors which influence the design of farm structures.
- (b) i. State four advantages of fencing in farms.
ii. Explain briefly four purposes of foundations in construction of farm structures.
- (c) What is the use of each of the following farm structures?
 - i. crushes
 - ii. Dips
 - iii. Spray races

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