

MARKING SCHEME FORM 4 AGRICULTURE MID-TERM 2 EXAM 2026

SECTION A: (30 MARKS)

1. Sources of farm power: Human power, animal power, wind power, water power, solar power, fossil fuels (oil/petrol), electrical power. (Any 3, 3mks)
2. Two-stroke vs Four-stroke: Two-stroke completes cycle in one revolution (two strokes) while four-stroke completes in two revolutions (four strokes); Two-stroke engines are simpler/lighter; Four-stroke engines are more fuel-efficient/durable. (2mks)
3. Types of harrows: Disc harrow, tine harrow, chain harrow, triangular harrow. (Any 3, 3mks)
4. Definitions: a) Marginal Product: Additional output obtained from using an extra unit of input. b) Fixed Input: An input whose quantity does not change with the level of production. (2mks)
5. 'Steaming up': To increase the size of the foetus in the last stages of pregnancy; to build up body reserves for lactation. (2mks)
6. Factors for tool selection: Nature of the operation, scale of operation, availability of the tool, cost, soil type, durability. (Any 3, 3mks)
7. Artificial incubation advantages: Many eggs hatched at once, not dependent on broody hens, disease control is easier, uniform hatchings. (Any 2, 2mks)
8. Lubrication system parts: Oil pump, oil filter, oil sump, oil gallery/pipes, pressure relief valve. (Any 3, 3mks)
9. Broody hen indicators: Sitting on eggs, plucking own feathers, making low clucking sounds, aggressive behavior when approached, refusal to leave nest. (Any 2, 2mks)
10. Cooling system functions: Dissipate excess heat, maintain optimal engine operating temperature, prevent engine overheating, ensure efficient fuel combustion. (4mks)
11. Agroforestry: The practice of growing trees and crops or rearing livestock on the same piece of land simultaneously or sequentially. (2mks)
12. Animal-drawn implements: Cheap to maintain, requires no fuel, creates zero pollution, easy to operate for smallholders. (Any 2, 2mks)

SECTION B: (30 MARKS)

13. Mouldboard plough: a) Share, Mouldboard, Landside, Frog, Beam. (Any 3, 3mks) b) Maintenance: Cleaning after use, painting metal parts to prevent rust, sharpening the share, tightening loose bolts. (Any 2, 2mks)

14. Production function: a) Stage I (Increasing returns), Stage II (Decreasing returns), Stage III (Negative returns). (3mks) b) Stage II; because the marginal product is positive but decreasing, allowing for efficient resource use without wasting inputs. (2mks)

15. Fertilizer Calculation (DAP 18:46:0): Total = 150kg. Nitrogen: $18/100 * 150 = 27\text{kg}$. Phosphorus: $46/100 * 150 = 69\text{kg}$. Potassium: $0/100 * 150 = 0\text{kg}$. (5mks)

16. Poultry egg: a) Air sac, Albumen, Germinal disc, Shell. (4mks) b) Air sac: Provides oxygen to the developing embryo during hatching. (2mks)

17. Land factors: Topography (slope), soil fertility, climate/rainfall, size of land, tenure system. (Any 3 explained, 6mks)

18. Egg candling: Passing an egg in front of a strong light source to check for fertility, embryo development, or cracks. (3mks)

SECTION C: (40 MARKS)

19. a) Factors affecting FYM quality: Type of animal, type of bedding, age/rate of decomposition, storage method, diet of the animal. (10mks) b) Improving fertility: Application of organic manure, inorganic fertilizers, liming, crop rotation, cover cropping, minimum tillage. (10mks)

20. a) Tractor advantages: Higher speed, handles large acreage, versatile (pulling/lifting/stationary work), efficient for deep ploughing, reduces drudgery. (10mks) b) Battery maintenance: Topping up electrolyte with distilled water, cleaning terminals, tightening terminals, checking for cracks, recharging regularly. (10mks)

21. a) Choosing livestock enterprise: Availability of market, capital available, farmer's skills, land size, government policy, availability of feed/water. (10mks) b) Low milk production: Diseases (mastitis), poor nutrition, poor breed, bad milking technique, parasite infestation, stress, old age. (10mks)