KAMSSA S6 AGRICULTURE PAPER 1 SCORING GUIDE 2026

ITEM ONE

(a) Markin yoghurt

Procedure of marking high quality flavoured (yoghurt materials to use)

Materials to use

- Fresh milk
- Flavours
- Stirrer eg spoon
- Aseptic containers
- Starter culture
- Stabilizers
- Sauce pan
- Refrigerator
- Protective gears
- Preservative gears
- Preservatives
- Ice bath/cold water
- Heat source

Procedure

- Protective gears such as apron, mask, gloves are put on for hygiene standards and body safety.
- The materials and equipment to use in making yoghurt are assembled ensuring that they are clean to avoid contamination of product.
- Fresh milk is heated to about 80^0C while stirring to prevent milk from scorching and kill harmful bacteria.
- The milk is cooled to 46^0C in an ice bath or cold water to make it hospital for good bacteria.
- A starter culture is added to the milk to provide good bacteria and inoculate for about 5-8 hours at warm temperatures to spread and promote the growth of good bacteria and increase the thickness of yoghurt.
- 2 teaspoons of flavors are added to improve the taste of yoghurt.
- A stabilizer is added to prevent milk separation and extend the shelf life of yoghurt
- Preservatives are added and the yoghurt refrigerated to cool and set for sometimes
- The yoghurt is the packed in aseptic containers to prevent contamination and labeled with product name, business name, production date, expiry date, flavor and ingredients to ease marketing

ITEM ONE B

- Un =even taste of yoghurt. This was due to poor mixing of the ingredients/flavor. They should ensure through mixing of the ingredients to achieve uniform taste are product consistency.
- Inconsistent colour of yoghurt. This was due to use of poor quality and unstable flavoring agents farmers should use high quality flavors to ensure product uniformity.

- Yoghurt spoiled quickly. This was due to contamination and poor spoilage. They should improve sanitation and hygiene to reduce microbial growth and spoilage.
- Leaking of some packages. This was due to use of poor quality packaging materials. They should ensure the use of appropriate and high quality packaging materials to reduce contamination and leakages.
- Production costs were high. this was due to wastage and inefficient production. They should reduce wastage and source inputs economically to reduce the costs per unit and prove profitability.
- Some batches of yoghurt released watery liquid shortly after fermentation. This was due to improper fermentation. Farmers should control fermentation conditions and increase milk solids (add milk powder) to prevent resynthesis.

ITEM 2

A(CYTOLOGY)

How the farmer can improve cellular function and crop productivity:

- Plants exhibit persistent wilting: this is due to water movement out of cells leading to reduced turgor pressure. He should ensure proper irrigation and mulching to maintain water balance.
- Leaves are cell owing with some showing scorched edges. This is due to chloroplast disfunction which lowers the amount of chlorophyl present in leaves. He should apply nitrogen and magnesium fertilizers to encourage chlorophyl formation.
- Plant growth remains stunted and fruit formation is poor. This is due to ribosome impairment which reduces protein synthesis leading to poor growth and repair. He synthesis leading to poor growth and repair he should ensure adequate nitrogen supply to increase protein synthesis and growth.
- Many leaf cells appear flaccid with reduced internal volume. This is due to extreme water loss that makes the cytoplasm to pull a way from the cell wall. He should rehydrate the plants regularly to improve soil moisture.
- The internal cell structures are poorly defined. This is due to nucleus malfunction which interferes with cell division and activities. He should correct nutrient deficiencies to restore cell division and normal activities.
- Reduce energy production. This is due to mitochondrial inefficiency leads to reduce ATP production. He should improve soil aeration to support respiration.

ITEM TWO

B(ANIMAL ANATONT MORTHOLOGY AND PHYSIOLOGY)

- Reduced milk yield. This is due to impaired mammary gland function and low nutrient supply. He should ensure proper mulching practices and improve feeding to supply the required nutrients
- Gradual weight loss and general body weakness despite being fed regularly. This is due to poor digestion and absorption of digested food which may be caused by internal parasites. He should deworm animals to control internal parasites and provide balanced rations which can easily be digested and absorbed.

- Some animals have poorly developed muscles. This due to weak muscle tissues which may be due to protein deficiency. He should provide protein rich feeds to provide the required proteins for muscle development.
- Fatigue and slow movement. This is due to respiration inefficiency leading to reduced energy production. He should provide energy rich feed and ensure proper resting of the animal to allow energy production and restoration.
- Slow growth rates of animals. This is due to impaired digestive system and poor feeding of the animals. He should ensure good digestive health and provide balanced rations to provide the nutrients for growth.
- Rough hair coats among animals. This is due to poor skin and hair condition which may be due to mineral/vitamin deficiency. He should provide mineral and vitamin supplements to ensure proper skin/hair growth
- Reduced appetite among animals. This is due to digestive/metabolic. He should provide clean water, treat infections and improve feed quality to improve digestive health.

ITEM 3

- He selected a industry site for period construction, this exposes fish to attack by predators and other wild animals. He should first clear the site for period construction before its establishment to protect the fish from attacks by predators.
- He selected a site for period construction for a way from his home. This exposes the fish to theft. He should construct his period near the home for fish safety and easy supervision.
- He constructed his period on sandy soils. This reduced the amount of water available for the fish in the period due to the increased drainage capacity for sand soil. He should construct the period on a suitable soil to reduce fluctuation in water levels in the period.
- He bought fingerlings from an open market. This may led to purchase of diseases or poor quality fingerlings. He should always buy fingerling from a known source to ensure purchase of disease free and high quality fingerling.
- He introduced fingerlings into the period a day after application of manure. This would cause death of fish due to inadequate food since plantation had not yet grown. He should introduce fingerling into the period days after applying manure to enable them find the plantation already in the period.
- Some plants were observed growing in period water which he claimed to act as feeds would compete with fish for planktons leading to their death. He should avoid over fertilization of the pond water to reduce growth of aquatic plants.
- He fed his fish once a day. This could lead to starvation and death of fish. He should feed his fish regularly (at least twice a day) to supply one required nutrients for the growth and development of fish.
- Some fish were observed with swollen gills, rotten fins and reduce feeding. This could be due to diseases which would reduce the growth of run as well as leading to mortality. He should introduce recommended drugs in the pond water to control diseases.
- Some fish were eaten by unknown organisms on the pond sides. This leads to death of fish and reduction in number causing losses. He should install a net around the fish pond to keep away predators and other dangerous animals.

- The little fish that remained were harvested at the age of 100months. This leads to losses since the fish is not yet mature. He should harvest fish at the recommended age to reduce premature harvesting that leads to losses.
- Fish harvesting was done using a basin. This nonvegetative and would even extract very young fish from water. He should use a suitable harvesting method to reduce losses due to poor harvesting methods.
- The harvested fish was packed in tight black polythese. This leads to easy spoilage of fish. He should pack harvested fish is appropriate containers to reduce spoilage

ITEM FOUR

- Cows were frequently observed Panti and crowding near openings of stied during day. This was due to overcrowding and poor ventilation of the shed that would lead to heat accumulation within. He should ensure proper ventilation of the animal shed to allow free air circulation.
- Water often stagnated around the housing area after cleaning. This was due to poor location of house on a very flat area. He should establish the animal house on a gentle slopping area to allow easy drainage of water.
- Some animals showed uneven body sizes and love milk yield. This was due to poor feeding of these animals on imbalanced rations. He should ensure provision of balance rations to animals to supply the required nutrients for growth and milk production.
- Some animals developed recurrent illnesses shortly after purchase. This was due to poor selection of animals during purchase. He should source healthy animals during from reliable farms to avoid these recuming illnesses.
- New animals introduced into the hard were kept together with the rest immediately. This would lead to introduction of diseases to the farm/spread of diseases from one farm to another. He should isolate and monitor new animals before mixing them with the already existing ones to reduce disease outbreaks.
- Cows depended mainly on natural pasture, this would lead to stunted growth and reduced milk production due to inadequate supply of the required nutrients. He should provide supplementary and balanced nations to supply the required nutrients to the animals.
- Some animals developed swollen udder and produced milk with flakes. This was due to mastitis. He should treat infections promptly and maintain udder hygiene to reduce further infections and ensure quality milk production.
- Ticks were commonly seen on animal bodies. These suck blood from the animals bodies leading to anaemia and stress which lower growth and milk yield. He should ensure regular spraying and dipping of animals to kill and control these ticks
- Farm workers depended on memory to manage breeding and milk production. Theses would forget interfering with key decision making on the farm. He should ensure that workers keep accurate breeding and production records to ease farm management.
- Animals compete for limited feeding and resting space. This was due to overstocking and would increase stress among animals. He should ensure a correct stocking density to reduce competition these resources among animals.

- Milk was found with visible dirt particles. This was due to pour milking hygiene would reduce the quality of milk he should practice clean milking procedure to maintain the quality of the produced milk.
- Milk was stored in ordinary containers for several hours before delivery. This would speed the rate of milk spoilage. He should ensure the use of appropriate containers (milk cans) to store milk to reduce the rate of spolage.
- The quantity of milk supplied fluctuate greatly from day to day. This might have been due to poor feeding and have management. He should ensure improved feeding and have management for stable production.
- Item five
- Farmers initiated bean production on communal land. This associated with conflicts with the neighbours due to unclear responsibilities. They should establish clear land use agreements to minimize land use conflicts.
- The field had previously been over cultivate and crop residues were usually burnt before planting. This is associated with soil degradation which leads to reduced soil fertility and productivity. They should practice soil conservation measures to restore and maintain soil fertility.
- Soil appeared loose and prone to erosion. This would wash a way the top fertile soil from one leading to soil infertility. They should implement soil erosion control measures (contour farming and cover cropping) to minimize soil erosion,
- Members used poor quality old seeds. This could lead to reduced plant population as some seeds may not germinate. They should use certified viable seeds to achieve a good plant population.
- Uneven planting depth. This hinders uniformly in germination and some seeds may completely fail to germinate. They should plant at recommended depth to achieve uniform germination and emergency.
- Inconsistent plant populations across the field. This might have been due to poor spacing and use of poor quality seeds. They should ensure proper spacing and gap filling to achieve the night plant population.
- Some plants showed poor growth and pale leaves. This was due to nutrient deficiency. They fertilizers/manure to supply the required nutrients for proper plant growth.
- Late weeding. This allows weeds to outeumpese crops for growth factors lowering their growth and yield. They should ensure timely weeding to reduce competion for the growth factors.
- Delayed pest control. This expose crops to destruction lowering their growth and yield. They timely employ appropriate pest control measure to reduce crop damage and losses.
- No clear field operations schedule. This would lead to uncoordinated operations and poor trimming leading to poor yields. They should develop and follow a clear field operation schedule to ensure timely operations.
- Some pods shattered before harvesting. This leads to scattering of seeds a lower the garden leading to losses. They should practice timely harvesting to minimize crop losses.

- The bean were helped on ground. This leads to rotting and contamination of seeds with soil and other materials. They should ensure proper drying of beans on clean surfaces to maintain their quality.

Item 6

- The farmer had no documented ownership of land and occasionally faced disputes. This would interrupt production leading to untimely operations. He should acquire legal land ownership to ensure uninterrupted production.
- Stunted growth of crops and yellowing of leaves. This was due to poor soil fertility. He should apply manure/fertilizers to improve on the soil fertility.
- Sections of land are water logged when it rains this is due to poor soil drainage. He should establish proper drainage systems to control waterlogging.
- Seeds were broadcasted over the field. This leads to uneven germination and poorly spaced plants. He should use a suitable planting method (row planting) to allow uniform germination and spacing.
- Seed failed to emerge completely in some areas. This might have been due to the use of poor quality seeds from unknown sources. He should use viable and certified seeds to achieve good germination.
- Some seedlings were observed to be weak. This might have been due to poor land preparation and shallow planting depth. He should ensure proper land preparation and use of a recommended planting depth to ensure good an choragi and strength of seedlings.
- Weeds dominated the field in the early stages these would compete with the maize plants lowering their growth and yield. He should ensure timely weeding to reduce competition for growth factors.
- Maize plants showed signs of nutrient deficiency. This would hinder crop growth leading to low yields. He should apply manure/fertilizers to supply the required nutrients for maize growth and yield.
- Unknown insects were seen. These were pests and would destroy crops interfering with their growth and yield. He should apply appropriate pest control measure (spraying with pesticides) to kill the pests.
- Irregular crop spacing resulting in overcrowding in some areas and sparse stands in others. He should practice thinning and gap filling to achieve the right spacing.
- Some cubs had started rotting in the field. This was due to delayed harvesting and would lead to losses. He should practice timely harvesting to minimize crop losses while still in the field.
- Some cubs were attacked by storage pests shortly after being kept in a lacking store. This would reduce and quality and quantity of the stored of produce in leak and pest proof storage facilities to reduce crop destruction.