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Date: 11/10/2022

Subject: BOTANY

Topic : STRATEGIES FOR
ENHANCEMENT IN FOOD
PRODUCTION L1

Class: Standard XII

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1. What percentage of the world's livestock population is constituted together by India and China?

- ☐ A. 25%
- ☒ B. 70%
- ☐ C. 50%
- ☐ D. 100%

Man domesticates a variety of animals for food, transport, agricultural operations etc. Domestic animals which are kept for use and profit constitute livestock. Examples include buffaloes, cows, pigs, sheep etc.

As estimated, more than 70% of the world livestock population is in India and China. Contrary to this, the contribution to the world farm produce is just 25% which means that the productivity per unit is very low.

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2. Read the following statements and identify the false ones.

- ☒ A. Animal husbandry and plant breeding play a minor role in increasing food production
- ☐ B. Animal husbandry is the agricultural practice of breeding and raising livestock
- ☐ C. With an ever increasing population of the world, enhancement of food production is a major necessity
- ☐ D. Man domesticates a variety of animals for food, transport, agricultural operations, wool, fur, research, etc

An increasing population of the world demands enhancement in food production. It is therefore necessary to increase the production of food obtained from both plants and animals. So animal husbandry and plant breeding play a major role in increasing food production, not a minor one.

Animal husbandry is the agricultural practice of breeding and raising livestock. It deals with the rearing, caring and breeding of livestock like buffaloes, cows, pigs, horses, cattle, sheep, camels, goats etc.



Figure : Animal husbandry

Plant breeding is the science of modifying traits in plants to produce desired characteristics. It is done to improve the quality of nutrition in products extracted from plants.



Figure : Plant breeding

Domestic animals are those that have been tamed and kept by humans and they have adapted over generations to live alongside humans. They are selectively bred and genetically adapted over generations. Man has domesticated a variety of animals for food (eg: pig), transport (eg: horse), agricultural operations (eg: ox), wool (eg: sheep), fur (eg: sheep), research (eg: sheep), etc.

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3. _____ changed the nomadic lifestyle of the human population into a sedentary lifestyle in the neolithic age.

- ☒ A. Agriculture
- ☐ B. Livestock
- ☐ C. Cattle
- ☐ D. Breed

Agriculture is the practice of cultivating useful plants and animals. Early humans led a nomadic life, that means they used to travel from place to place in search of resources like food, water etc.

Over years of evolution, early humans started agriculture. This changed the wanderer lifestyle (nomadic) of the human population into a sedentary lifestyle in the neolithic age.

They were able to do crop cultivation and cattle raising which gave them food security. They started rearing animals like sheeps, cows, etc. for milk, meat and clothes too. They also did fishing for food.

Animal husbandry is the systematic rearing, caring and breeding of livestock. Livestock constitutes domestic animals kept for use or profit like cows, pigs, sheep, camels etc.

Cattle is a generalised term used for the large domesticated hoofed animals. Examples include cow, buffalo, ox, etc.

Breed is a specific group of animal or plant exhibiting homogenous characters in appearance and behaviour which are distinct from other organisms of the same species. Example is the Jersey cow.

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4. Neetu studied in her class that according to 2018 census human population is approximately 7.58 billion. This is a huge population to feed and the size is rapidly increasing. A major section of population is not properly fed. Which of them could be the possible problems associated with the population explosion?

- A. Famine
- B. Increased standard of living
- C. Poverty
- D. No effect on environment

☐ A. A, B and D

☐ B. A and B

☐ C. C and D

☒ D. A and C

Population explosion refers to the sudden and rapid rise in the size of the population, especially the human population. This leads to a wide variety of problems including reduction in the per capita income, poverty, lower standard of living, etc.

It also has a negative impact on the environment. It leads to the cutting of forests for cultivation. It also leads to the migration of a large number of people to urban areas with industrialization. This can result in polluted air and water.

A famine is a widespread scarcity of food, which is caused by several factors including war, crop failures, population explosion, or government policies. This phenomenon is normally followed by regional malnutrition, starvation, epidemics, and increased mortality rate.

Famine, unemployment, food crisis etc. are other problems associated with population explosion.

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5. Read the following statements having two blanks (A) and (B)
 'Animal husbandry deals with the care and breeding of livestock that are useful to humans, including _____ A _____ and _____ B _____.'

The correct option for the two blanks is

- ☒ A. A - fisheries, B - poultry farming
- ☐ B. A - poultry farming, B - plant breeding
- ☐ C. A - plant breeding, B - fisheries
- ☐ D. A - plant breeding, B - tissue culture

Animal husbandry deals with the care and breeding of livestock like buffaloes, cows, pigs, horses, cattle, sheep, camels, goats etc. that are useful to humans. It includes rearing, caring, selective breeding and raising of livestock. It also includes fisheries and poultry farming. It does not include sericulture, plant breeding or apiculture.

Fisheries include rearing, catching, selling etc. of fish, molluscs (like shell - fish) and crustaceans (like prawns, crabs).

Poultry farming refers to the class of domesticated fowls (birds) used for meat or for their eggs. They include hen, ducks, turkey, pigeons, etc.

Plant breeding is the genetic improvement of a plant species in order to create plants with desired qualities that are better suited for cultivation.

Tissue culture is the process of regenerating a whole plant from a few cells or tissues from any part of the plant by growing it in a test tube, under sterile conditions in special nutrient media.

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6. Study the four statements (A-D) and select the correct combination representing the below mentioned statements as True (T) or False (F)?

- A. Milk yield is primarily dependent on the quality of breeds in the farm.
B. Selection of a good breed having high yielding potential combined with resistance to disease is very important.
C. Majority of the grazing lands are either degraded or encroached due to industrialization and urbanization.
D. Balanced cattle feed should contain roughage and fibres only.

- ☐ A. A - T, B - T, C - F and D - T
☒ B. A - T, B - T, C - T and D - F
☐ C. A - T, B - F, C - T and D - F
☐ D. A - F, B - T, C - T and D - F

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Animal husbandry deals with the care and breeding of livestock like buffaloes, cows, pigs, horses, cattle, sheep, camels, goats etc. that are useful to humans.

Animal husbandry faces lots of challenges. It includes low productivity in milk and meat production, deficiency in the forage, quality of food supply, etc.

The yield of milk and meat is primarily dependent on the quality of breeds. Therefore, selection of a good breed is important. Breeds having high yielding potential as well as resistance to disease under the climatic conditions of the area are selected.

Unavailability of the forage is a major issue nowadays. It includes the plants eaten by the animals directly as pasture, crop residue, or immature cereal crops and even hay. Majority of the grazing lands are either degraded or encroached due to industrialization and urbanization. This is a threat for the local farmers, who have to spend more money on fodder and cattle feed.

Balanced cattle feed should contain roughage and concentrate. Roughage which is the coarse, fibrous substance having low nutrient content. It helps in proper movement of food in the intestine and prevents intestinal diseases. E.g. Green fodder and hay. Concentrate is low in fibre but is relatively high in proteins and other nutrients. It helps in proper growth and development. It helps in milk and meat production. E.g. Cereals, millets and oil seeds.



Balanced cattle feed

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7. _____ refers to the sudden and rapid rise in the size of the population, especially the human population.

- ☐ A. Population growth
- ☒ B. Population explosion
- ☐ C. Census
- ☐ D. Population genetics

A population is a number of all the organisms of the same group or species who live in a particular geographical area.

Population explosion refers to the sudden and rapid rise in the size of the population, especially the human population.

Population growth is the increase in the number of individuals in a population.

Census is the procedure of calculating, acquiring and recording information about the members of a given population in a systematic way. Many countries take not only the census of humans but census of housing, manufacturing units, and agriculture.

Population genetics is branch of genetics deals with the genetic differences within and between populations. It is the study of the genetic composition of a population and the various factors affecting it.

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8. Which of the following was not an objective of the White Revolution?

- ☐ A. Increased milk production
- ☒ B. Supplement urban income
- ☐ C. Employment and improved income for dairy farmer
- ☐ D. Fair milk prices for consumer

Operation Flood is the program that led to the White Revolution. This revolution is associated with a sharp increase in milk production in India. The period of White Revolution intended to make India a self-dependent nation in milk production. Today, India is the world's largest producer of milk. Dr Verghese Kurien is known as the father of the White Revolution in India.

Objectives of White Revolution in India:

1. Increased milk production
2. Supplement rural income
3. Employment and improved income for dairy farmer to ensure constant and steady supply of milk in return
4. Fair milk prices for consumer

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9. In the following question a statement of assertion (A) is followed by a statement of reason (R).

A - Animal husbandry is an agricultural practice

R - Animal husbandry deals with the care and breeding of livestock that are useful to humans

- ☒ A. Both assertion and reason are true, and the reason is the correct explanation of the assertion
- ☐ B. Both assertion and reason are true, but the reason is not the correct explanation of the assertion
- ☐ C. Assertion is true but reason is false
- ☐ D. Both assertion and reason are false statements

Agricultural science includes an overall development of crop production and livestock (farm animals).

Animal husbandry deals with the care and breeding of livestock like buffaloes, cows, pigs, horses, cattle, etc. that are useful to humans. It includes poultry farming and fisheries.

As animal husbandry includes the development of the livestock which is a part of agricultural science the reason is the correct explanation of the assertion.