*__Calcitriol__ is sercreted by proximal tubules of nephron. It is an active form of vitamin D3 which promotes calcium and phosphorus absorption from intestine and accelerates bone formation.

30. Write a detailed account of gastro intestinal tract hormones.

Gastro intestinal tract hormones

Group of specialized endocrine cells present in gastro-intestinal tract secretes hormones such as gastrin, cholecystokinin (CCK), secretin and gastric inhibitory peptides (GIP). **Gastrin** acts on the gastric glands and stimulates the secretion of HCl and pepsinogen.

Cholecystokinin (CCK) is secreted by duodenum in response to the presence of fat and acid in the diet. It acts on the gall bladder to release bile into duodenum and stimulates the secretion of pancreatic enzymes and its discharge.

Secretin acts on acini cells of pancreas to secrete bicarbonate ions and water to neutralize the acidity.

Gastric inhibitory peptide (GIP) inhibits gastric secretion and motility.

CHAPTER-12 TRENDS IN ECONOMIC ZOOLOGY

Evaluation

1. Which one of the following is not related to vermiculture?

a. Maintains soil fertility

b. Breakdown of inorganic matter

c. Gives porosity, aeration and moister holding capacity

d. Degradation of non biodegradable solid waste

a. a and b is correct

b. c and d is correct

c. b and d is not correct

d. a and c is not correct

2. Which one of the following is not an endemic species of earthworm?

a. *Perionyx* a. *Lampito* **b. *Eudrillus*** c. *Octochaetona*

3. Match the following

1. *Bombyx mori* - a) Champa - I) Muga

2. *Antheraea assamensis* - b) Mulberry - II) Eri

3. *Antheraea mylitta* - c) Arjun - III)Tassar

4. *Attacus ricini* - d) Castor - IV) Mulberry

Select the correct one.

A) 1 – b – IV B) 2 – a – I C) 3 - c - III D) 4 - d - II

4. Silk is obtained from ….

a. *Laccifer lacca*

b. *Nosema bombycis*

c. *Attacus ricini*

d. *Attacus mylitta*

5. **Assertion*:*** Nuptial flight is a unique flight taken the queen bee followed by several drones.

Reason: The queen bee produces a chemical substance called pheromone.

The drones in that area are attracted to the pheromone and then mating takes place.

a. Assertion and reason is correct but not related

b. Assertion and reason is incorrect but related

c. Assertion and reason is correct but related

d. Assertion and reason is incorrect but not related

6. Rearing of honey bee is called

a. Sericulture b. Lac culture c. Vermiculture **d. Apiculture**

7. Which of the statement regarding Lac insect is TRUE?

a. A microscopic, resinous crawling scale insect

b. Inserts its proboscis into plant tissue suck juices and grows

c. Secretes lac from the hind end of body.
d. The male lac insect is responsible for large scale production of lac.
8. Aquaponics is a technique which is
a. A combination of aquaculture and fish culture
b. A combination of aquaculture and hydroponics
c. A combination of vermiculture and hydroponics
d. A combination of aquaculture and prawn culture.
9. Prawn belongs to the class
a. crustacean b. Annelida c. Coelenterata d. Echinodermata
10. Pearl oyster belongs to the Class
a. Gastropoda b. Cephalopoda c. Scaphapoda **d. Pelecypoda**
11. Inland fisheries are
a. deep sea fishing b. capturing fishes from sea coast
c. Raising and capturing fishes in fresh water d. oil extraction from fish
12. Induced breeding technique is used in
a. Marine fishery b. Capture fishery c. Culture fishery **d. Inland fishery**
13. Isinglass is used in
a. Preparation **b. Clearing of wines**
c. Distillation of wines d. Preservation of wines

14. Animal husbandry is the science of rearing, feeding and caring, breeding and disease control of animals. It ensures supply of proper nutrition to our growing population through activities like increased production and improvement of animal products like milk, eggs, meat, honey, etc.

a. Poultry production depends upon the photoperiod.Discuss

*Light is an important aspect of an animals environment. Avian species as well as mammalian species respond to light energy in a variety of ways, including growth and reproductive performance.
*The value of regulating the photoperiod of poultry and livestock to stimulate reproduction has been recognized for many years and is used regularly by commercial poultry and livestock farmers.
*For chickens there are three major functions of light:
1. to facilitate sight,
2. to stimulate internal cycles due to day-length changes, and
3. to initiate hormone release.

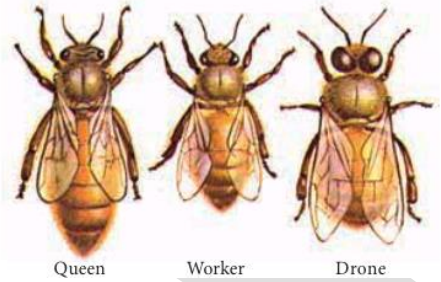
Research has shown that the color of light can have many different effects on behavior, growth and reproduction in poultry.
Birds sense light through their eyes (retinal photoreceptors) and through photosensitive cells in the brain (extra-retinal photoreceptors).
Since long wavelengths of light (towards red end of the spectrum) penetrate the skin and skull more efficiently than short wavelengths, it has been observed that growth and behavior are linked to retinal photoreception (and shorter wavelengths) whereas the reproduction has been linked to extra-retinal photoreceptors.
From these observations it has been reported that blue light has a calming effect on birds, however, red has been used to reduce cannibalism and feather picking.
It has also been shown that blue-green light stimulates growth in chickens while orange-red stimulates reproduction

b. Polyculture of fishes is of great importance.

Composite fish farming

*Few selected fishes belonging to different species are stocked together in proper proportion in a pond.
*This mixed farming is termed composite fish farming or polyculture. The advantages include,
1. All available niches are fully utilized.
2. Compatible species do not harm each other.
3. No competition among different species is found.

4. *Catla catla, Labeo rohita* and *Cirrhinus mrigala* (surface feeder) are the commonly used fish species for composite fish farming.
15. Assertion: The best quality of pearl is known as lingha pearl and obtained from marine oysters.
Reason: Nacre is secreted continuously by the epithelial layer of the mantle and deposited around the foreign particle
a. Assertion is true, Reason is false
b. Assertion and Reason are false
c. Assertion is false But Reason is true
d. Assertion and Reason are true
16. Choose the correctly matched pair
1. Egg layers – Brahma
2. Broiler types - Leghorn
3. Dual purpose – White Plymouth rock
4. Ornamental breeds – Silkie
17. Write the advantages of vermicomposting.
Advantages of Vermicomposting: 1.Environment friendly 2.No imported inputs required 3.Labor extensive 4.Highly profitable
Benefits of vermicompost/casting on the soil
1.Increase moisture and nutrient retention of the soil.
2.Improves aeration and root penetration.
3.Reduces crusting of soil surface.
4.Micronutrients are added.
5.Increases the number of beneficial soil microorganisms.
18. Name the three castes in a honey bee colony



A well developed honey bee colony consists of the Queen, Drones and Workers. All the three types depend on each other for their existence.
There is normally one queen,10,000 to 30,000 workers and few hundred drones (male bees) in a colony.
19. Name the following
i. The largest bee in the colony
Queen Bee
ii. The kind of flight which the newvirgin queen takes along with the drones out of the hive
Nuptial flight
20. What are the main duties of a worker bee?
*Among the honey bees, **workers** are sterile females and smallest but yet function as the main spring of the complicated machinery in the colony.
*Worker bee lives in a chamber called 'Worker Cell' and it takes about 21 days to develop from the egg to adult and its lifespan is about six weeks.
*Each worker has to perform different types of work in her life time.
*During the first half of her life, she becomes a nurse bee attending to indoor duties such as secretion of royal jelly, prepares bee-bread to feed the larvae,feeds the queen, takes care of the queen and drones, secretes bees wax, builds combs, cleans and fans the bee hive.

*Then she becomes a soldier and guards the bee hive. In the second half her life lasting for three weeks, she searches and gathers the pollen, nectar, propolis and water.

21. What happens to the drones after mating flight?

* The drones die after mating flight.

*The sole duty of the drone is to fertilize the virgin queen hence called "King of the colony". During swarming (the process of leaving the colony by the queen with a large group of worker bees to form a new colony) the drones follows the queen, copulates and dies after copulation.

22. Give the economic importance of Silkworm

1. Silk fibers are utilized in preparing silk clothes. Silk fibers are now combined with other natural or synthetic fibers to manufacture clothes like **Teri-Silk, Cot-Silk** etc. Silk is dyed and printed to prepare ornamented fabrics. They are generally made from Eri-silk or spun silk.
2. Silk is used in industries and for military purposes.
3. It is used in the manufacture of fishing fibers, parachutes, cartridge bags, insulation coils for telephone, wireless receivers, tyres of racing cars, filter fibres, in medical dressings and as suture materials.

23. What are the Nutritive values of fishes?

*Fishes frrm a rich source of protein food and provide a good staple food to tide over the nutritional needs of man.

* Fish species such as sardines, mackerel, tuna, herrings have high amino acids concentrations particularly histidine which is responsible for the meaty flavor of the flesh. It is rich in fat such as omega 3 fatty acids.

*Minerals such as calcium, magnesium, phosphorus,potassium, iron, manganese, iodine and copper.

24. Give the economic importance of prawn fishery

The **prawns** are one of the most **economically important fishery** organism of India.

It helps to earn a sizeable amount of foreign exchange.

The **prawns** are the most esteemed food among the marine food organisms. ... Apart from being a delicacy, **prawns** are a rich source of protein and vitamins (A and D)

Economic importance of prawn:

1. It is a tasty protein food.
2. Economic development can be achieved through prawn culture.
3. Prawn takes part in earning foreign currency.
4. It is much profitable to cultivate prawn in fresh water at a comparatively lower cost. well.

So, it is very profitable to cultivate prawn in a planned scientific manner.

25. Give the economic importance of lac insect

Economic importance of Lac

a. Lac is largely used as a sealing wax and adhesive for optical instruments.It is used in electric industry, as it is a good insulator.

b. It is used in preparations of shoe and leather polishes and as a protective coating of wood.

c. It is used in laminating paper board, photographs, engraved materials and plastic moulded articles.

d. Used as a filling material for gold ornaments

26. List any three common uses of shellac.

Shellac is a resin secreted by the female lac bug, on trees in the forests of India and Thailand.

It is processed and sold as dry flakes (pictured) and dissolved in alcohol to make liquid shellac, which is used as a brush-on colorant, food glaze and woodfinish.

27. Name any two trees on which lac insect grows.

Karanagalli (*Acacia catechu*),

Karuvelai (*Acacia nilotica*) and

Kumbadiri(*Schleichera oleosa*).

28. What is seed lac?

The lac present on the twig is scraped and collected. Aftergrinding, the unnecessary materials like dusts and fine particles are removed. The resultant lac is called 'seed lac'. The seed lac is sun dried and then melted to produce 'shellac'.

29. Define cross breeding.

Cross breeding: Breeding between a superior male of one breed with a superior female of another breed. The cross bred progeny has superior traits (hybrid vigour or heterosis.)

30. What are the advantages of artificial insemination?

Advantages of artificial insemination

i. It increases the rate of conception
ii. It avoids genital diseases
iii. Semen can be collected from injured bulls which have desirable traits.
iv. Superior animals located apart can be bred successfully.

31. Discuss the various techniques adopted in cattle breeding?

Methods of Animal breeding:

There are two methods of animal breeding, namely inbreeding and outbreeding

1. Inbreeding:

Breeding between animals of the same breed for 4-6 generations is called inbreeding. Inbreeding increases homozygosity and exposes the harmful recessive genes. Continuous inbreeding reduces fertility and even productivity, resulting in "inbreeding depression". This can be avoided by breeding selected animals of the breeding population and they should be mated with superior animals of the same breed but unrelated to the breeding population. It helps to restore fertility and yield.

2. Outbreeding:

The breeding between unrelated animals is called outbreeding. Individuals produced do not havecommon ancestors for 4-6 generations. Outbreeding helps to produce new and favourable traits, to produce hybrids with superior qualities and helps to create new breeds. New and favourable genes can be introduced into a population through outbreeding.

i. **Out crossing**:

It is the breeding between unrelated animals of the same breed but having no common ancestry. The offspring of such a cross is called outcross. This method is suitable for breeding animals below average in productivity.

ii. **Cross breeding:**

Breeding between a superior male of one breed with a superior female of another breed. The cross bred progeny has superior traits (hybrid vigour or heterosis.)

iii. **Interspecific hybridization:**

In this method of breeding mating is between male and female of two different species. The progeny obtained from such crosses are different from their parents, and may possess the desirable traits of the parents. Have you heard about Mule? It was produced by the process of interspecific hybridization between a male donkey and a female horse.

32. Mention the advantages of MOET.

*It is another method of propagation of animals with desirable traits.
*This method is applied when the success rate of crossing is low even after artificial insemination.
*For another round of ovulation, the same genetic mother is utilized.
*This technology can be applied to cattle, sheep and buffaloes. Advantage of this technology is to produce high milk yielding females and high-quality meat yielding bulls in a short time.

33. Write the peculiar characters of duck.

Peculiarity of ducks:

The body is fully covered with oily feathers.
They have a layer of fat under their skin which prevents it from getting wet.
They lay eggs at night or in the morning.
The ducks feed on rice bran, kitchen wastes, waste fish and snails.

ALL THE BEST