IQBAL GROUP OF BS ZOOLOGY 03460004097

Iq662038@gmail.com
Muhammadiqbal4093@gmail.com

IQBAL GROUP OF BS ZOOLOGY 03460004097

I shall be thanks to Allah Almighty who blessed us with own blessings.

We provide better service in the field of zoology.

SPECIAL THANX TO: ♥DR RABIA IQBAL ♥ DR SHUMAILA IQBAL ♥ DR FAHMIDA IQBAL ♥ PRO.DR MUSHTAQ HUSSAIN RAZVI ♥ SANAM SHAH SAHB ♥ M.I.A♥ DUA GO ALLAMA MUHAMMAD ALTAF HUSSAIN ATARI♥M.IQBAL♥

Q.no1 Define vector?

A vector is a living organism that transmits an infectious agent from an infected

animal to a human or another animal. Vectors are frequently arthropods, such as

mosquitoes, ticks, flies, fleas and lice

Q.no2 What are Soil dwelling insect?

Many other insects are also beneficial. •Soil-dwelling insects play important roles in

aeration, drainage, and turnover of soil, and they promote decay processes. •Other

insects serve important roles in food webs. •Soil-dwelling insects are hidden in the

soil and hard to detect until the sudden appearance of damage creates the demand for

rapid, curative treatment.

Qno3. What is Royal jelly?

Royal jelly is a honey bee secretion that is used in the nutrition of larvae, as well as

adult queens. It is secreted from the glands in the hypopharynx of nurse bees, and

fed to all larvae in the colony, regardless of sex or caste.

Qno4 Describe Gaseous exchange in Ophiuroids?

Ten bursa on the bottom of the central body disk. - Cilia within the sacs direct water

flow so that oxygen can be absorbed from the water - Water flows through cilia or

muscular contraction. - Oxygen is transported by the hemal system.

Q.no5 Class Ophiuroidea belong to which phylum?

Phylum Echinodermata

Q.no6 Paurometabolous or metamorphosis?

Paurometabolous is the process of gradual metamorphosis. Paurometabolous is the

type of growth that occurs in insects such as cockroaches, which includes just three

stages, i.e. egg, nymph, and adult. It is called incomplete metamorphosis or

paurometabolous since it lacks the pupa stage.

Q.No7 Classes of hormones in insects.

There are two main classes of hormones in insects:

1) The true hormones produced by epithelial glands and belonging to the

- ecdysteroids or juvenile hormones.
- 2) The neuropeptide hormones produced by neurosecretory cells.

Qno8 exchange in Ophiuroids?

- - Ten bursa on the bottom of the central body disk.
- - Cilia within the sacs direct water flow so that oxygen can be absorbed from the water
- - Water flows through cilia or muscular contraction.
- - Oxygen is transported by the hemal system.

Qno9. Class Ophiuroidea belong to which phylum?

- Phylum Echinodermata

Qno10 Paurometabolous or metamorphosis ?

- Paurometabolous is the process of gradual metamorphosis. Paurometabolous is the type of
- growth that occurs in insects such as cockroaches, which includes just three stages, i.e. egg,

- nymph, and adult. It is called incomplete metamorphosis or paurometabolous since it lacks the
- pupa stage.

Qno11. There are two main classes of hormones in insects?

- 1) the true hormones produced by epithelial glands and belonging to the ecdysteroids or juvenile
- hormones.
- 2) the neuropeptide hormones produced by neurosecretory cells.

- **Qno12. Explain Mating Behavior in Insects? long**
- Mating behavior:
- Mating behavior is typically viewed as comprising all events from pair
- formation through courtship to the final breakup of the mating pair.
- Locating and recognizing mates:
- - Chemical attractants
- - Humming sound

- Courtship ritual.

- Mating:
- Internal fertilization by insertion of the male intromittent organ into the female genital
- tract for deposition of sperm is the usual method of copulation.
- BY PPT: Most insects have complex mating behaviors for locating and recognizing a potential
- mate, for positioning a mate for copulation, or for pacifying an aggressive mate.

- Mating behavior may involve pheromones (moths, order Lepidoptera), visual signals (fireflies,
- order Coleoptera), and auditory signals (cicadas, order Homoptera; and grasshoppers, crickets,
- and katydids, order Orthoptera).

- **Qno13 Hemal system in echinoderm?**
- in echinoderms, the blood vascular system is called hemal system, which is poorly developed in
- star fish and plays little role in circulation. The system consists of small fluid-filled sinus-
- channels that lack a distinct lining. The haemal channels are actually intercommunicating spaces
- and are not true blood vessels.

- **Qno14 Dermal Branchiae?**
- - External gill-like structures are scattered across their body surface.
- - Gas exchange.
- - Papulae.
- - Cilia beat and ventilate the respiratory surface.
- - Outer ectodermal epithelium, gland cells and a small basiepithelial nerve plexus.
- - Papulae function as a simple site of respiratory exchange.

- **Qno15 Aristotle's Lantern in Echinoids?**
- - Conical shaped chewing apparatus projecting from mouth.
- - Complex arrangement of muscles and calcareous teeth constituting about 35 ossicles.

- - Teeth are extruded to scrape algae and other food from rocks.
- - Five strong teeth, 40 skeletal ossicles and 60 muscles.
- - Masticating the food.
- - Feed on algae, bryozoans, coral polyps, and dead animal remnants.

Q no16 Discuss Class Asteroidea?

- 1,900 species and second largest group in the Echinodermata.
- They often live on hard substrates in marine environments.
- - Thin folds of the body wall, called dermal branchiae.
- - Pincher-like structures called pedicellariae.
- - Ambulacral groove and paired rows of tube feet.
- - Suction disks sensory receptors are distributed over the surface of the body and tube
- feet.
- - Sea stars are dioecious, and external fertilization is the rule.

- Bipinnaria larva.

Q.no17 Aristotle's Lantern in Echinoids?

Conical shaped chewing apparatus projecting from mouth. - Complex arrangement

- of muscles and calcareous teeth constituting about 35 ossicles. - Teeth are extruded
- to scrape algae and other food from rocks. - Five strong teeth, 40 skeletal ossicles
- and 60 muscles. - Masticating the food. - Feed on algae, bryozoans, coral polyps,

- and dead animal remnants.
- **Q.no18 Explain Class Asteroidea?**
- 1,900 species and second largest group in the Echinodermata.
- ▪ They often live on hard substrates in marine environments.
- ▪ Thin folds of the body wall, called dermal branchiae.
- ▪ Pincher-like structures called pedicellariae.
- ▪ Ambulacral groove and paired rows of tube feet.
- ▪ Suction disks sensory receptors are distributed over the surface of the body
- and tube feet.
- ▪ Sea stars are dioecious, and external fertilization is the rule.
- ▪ Bipinnaria larva
- **Q.no19 What is trapping?**
- Insect traps are used to monitor or directly reduce populations of insects or other
- arthropods, by trapping individuals and killing them.
- **Q.no20 Discuss Stomach of Star fishes?**
- A sea star has 2 stomachs, the cardiac stomach and the pyloric stomach. It can push
- the cardiac stomach out of its mouth, in the center of its underside, to engulf prey or
- insert it into prey (between 2 shells, for example). The stomach then secretes a
- powerful digestive enzyme to break down the prey.

- **Q.no21 Mating Behavior in Insects? Long**

- Mating behavior: Mating behavior is typically viewed as comprising all events from
- pair formation through courtship to the final breakup of the mating pair. Locating
- and recognizing mates: - Chemical attractants - Humming sound - Courtship ritual
- mating: Internal fertilization by insertion of the male intromittent organ into the
- female genital tract for deposition of sperm is the usual method of copulation. BY PPT: Most insects have complex mating behaviors for locating and recognizing a
- potential mate, for positioning a mate for copulation, or for pacifying an aggressive
- mate. Mating behavior may involve pheromones (moths, order Lepidoptera), visual
- signals (fireflies, order Coleoptera), and auditory signals (cicadas, order Homoptera;
- and grasshoppers, crickets, and katydids, order Orthoptera).

- **Qno22 Hemal system in echinoderm?**

- In echinoderms, the blood vascular system is called hemal system, which is poorly
- developed in star fish and plays little role in circulation. The system consists of small
- fluid-filled sinuschannels that lack a distinct lining. The haemal channels are

- actually intercommunicating spaces and are not true blood vessels.
- **Q.no23 Dermal Branchiae?**
- External gill-like structures are scattered across their body surface. - Gas exchange.
- - Papulae. - Cilia beat and ventilate the respiratory surface. - Outer ectodermal
- epithelium, gland cells and a small basiepithelial nerve plexus. - Papulae function as

a simple site of respiratory exchange.

- **Q.no24 Skeleton of sea urchin? Explain**
- Sea urchins are rounded, and their oral end is oriented toward the substrate.
- •Their skeleton, called a test, consists of 10 closely fitting plates that arch between
- oral and amoral ends. Five rows of ambulacral plates have openings for tube feet,
- and alternate with five inter ambulacral plates, which have tubercles for the
- articulation of spines. The base of each spine is a concave socket, and muscles at its
- base move the spine.
- •Spines are often sharp and sometimes hollow, and they may contain venom
- dangerous to swimmers.
- **Q.no25 What is Garden centipedes?**

- Members of the class Symphyla (sim-filah) (Gr. sym, same phyllos, leaf) are small
- arthropods (2 to 10 mm in length) that occupy soil and leaf mold, superficially
- resemble centipedes, and are often called garden centipedes.

- **Q.no26 Phylum of sea urchin?**
- Sea urchin is invertebrates and belong to phylum Echinoderm.

- **Q.no27 Explain Circulatory system?**
- The circulatory system of insects is similar to that described for other arthropods,
- although the blood vessels are less well developed. Insects, like all other arthropods,
- have an open circulatory system which differs in both structure and function from
- the closed circulatory system found in humans and other vertebrates. In a closed
- system, blood is always contained within vessels (arteries, veins, capillaries, or the
- heart itself).

- **Q.no28 Asexual process in chilophores?**
- Although fragmentation, fission, and budding are methods of asexual reproduction
- in a number of fungi, the majority reproduce asexually by the formation of spores.

- Spores that are produced asexually are often termed mitospores, and such spores are
- produced in a variety of ways.
- .Name of animal of diplopoda?
- Members of the class diplopods are Millipedes
- Most millipedes are slow-moving detritivores, eating decaying leaves and other dead plant
- matter

- **Qno 29. What is Trepang ?**
- The body wall of sea cucumbers, when boiled and dried, is known as trepang in Asian countries.

- **Qno30. Describe Starfish stomach?**
- The mouth opens to a short esophagus and then to a large stomach that fills most of the coelom
- of the central disk.
- The stomach is divided into two regions.
- •The larger, oral stomach, sometimes called the cardiac stomach, receives ingested food.
- •It joins the smaller, aboral stomach, sometimes called the pyloric stomach.

- **Qno31 Discuss Complete metamorphosis?**
- Complete metamorphosis is the type of insect development that includes egg, larva, pupal, and
- adult stages, which differ greatly in morphology. The lifecycle of butterflies, ants, fleas, bees,

- beetles, moths, and wasps are examples of the complete metamorphosis.

- **Qno32 Explain Ventilating process in insects? long**

- Most insects have ventilating mechanisms that move air into and out of the tracheal system.

  • Insects do not breathe through their mouths as we do.

- • The do not have lungs and their blood, which is a watery, yellowish liquid, does not

- carry oxygen and carbon dioxide around their bodies.

- • Insects have a system of tubes, called tracheae, instead of lungs.

- • These tracheae penetrate right through the insect's body.

- • Air enters the tracheae by pores called spiracles.

- • These spiracles are found on each side of the insect's abdomen. Each segment of the

- abdomen has a pair of spiracles.

- •As oxygen diffuses from the tracheae to the body tissues, and is not replaced by carbon dioxide,

  a vacuum is created that draws more air into the spiracles. This process is called passive suction.

Q.no33 Explain Insects pollination? Long

- Insects are responsible for the pollination of approximately 65% of all plant species.

- •Insects and flowering plants have co evolutionary relationships that directly benefit

- humans. The annual value of insect-pollinated crops is estimated at $19 billion per

- year in the United States. Insect pollination is crucial to most gardens and is as simple
- as insects like bees, butterflies and wasps flying from flower to flower in order to
- collect nectar.
- •In the process, pollen collects on their bodies and rubs off on other flowers that they
- visit.

- **Qno34 Name of animal of diplopoda?**
- Members of the class diplopods are Millipedes Most millipedes are slow-moving

detritivores, eating decaying leaves and other dead plant matter.

- **Qno35 Complete metamorphosis?**
- Complete metamorphosis is the type of insect development that includes egg, larva,
- pupal, and adult stages, which differ greatly in morphology. The lifecycle of
- butterflies, ants, fleas, bees, beetles, moths, and wasps are examples of the complete
- metamorphosis.

- **Q.no36 Ventilating process in insects? Long**
- Most insects have ventilating mechanisms that move air into and out of the tracheal
- system.
- • Insects do not breathe through their mouths as we do.

- • The do not have lungs and their blood, which is a watery, yellowish liquid, does

  not carry oxygen and carbon dioxide around their bodies.
- Insects have a system of tubes, called tracheae, instead of lungs.
- • These tracheae penetrate right through the insect's body.
- • Air enters the tracheae by pores called spiracles.
- • These spiracles are found on each side of the insect's abdomen. Each segment of
- the abdomen has a pair of spiracles.
- •As oxygen diffuses from the tracheae to the body tissues, and is not replaced by
- carbon dioxide, a vacuum is created that draws more air into the spiracles. This

  process is called passive suction.
- Skeleton of sea urchin? Imp.long
- Sea urchins are rounded, and their oral end is oriented toward the substrate.
- •Their skeleton, called a test, consists of 10 closely fitting plates that arch between oral and
- aboral ends.
- Five rows of ambulacral plates have openings for tube feet, and alternate with five inter
- ambulacral plates, which have tubercles for the articulation of spines.
- The base of each spine is a concave socket, and muscles at its base move the spine.

- •Spines are often sharp and sometimes hollow, and they may contain venom dangerous to
- swimmers.
-
-

- **Qno37 Circulatory system?**
- The circulatory system of insects is similar to that described for other arthropods, although the
- blood vessels are less well developed.
- Insects, like all other arthropods, have an open circulatory system which differs in both structure and
- function from the closed circulatory system found in humans and other vertebrates. In a closed
- system, blood is always contained within vessels (arteries, veins, capillaries, or the heart itself).

Qno38 Insects pollination? Long

- Insects are responsible for the pollination of approximately 65% of all plant species.
- •Insects and flowering plants have co evolutionary relationships that directly benefit humans.
- The annual value of insect-pollinated crops is estimated at $19 billion per year in the United
- States.
- Insect pollination is crucial to most gardens and is as simple as insects like bees, butterflies and

- wasps flying from flower to flower in order to collect nectar.
- •In the process, pollen collects on their bodies and rubs off on other flowers that they visit.
- **Qno39 what is Juvenile hormone?**
- There are two main classes of hormones in insects:
- • the true hormones produced by epithelial glands and belonging to the ecdysteroids or juvenile
- hormones.
- **Qno40 explain Sea lily and star?**
- PHYSICAL CHARACTERISTICS:
- Sea lilies have a stalk below the crown and look like flowers. Feather stars have a cluster of
- tentacles below the crown and look like ferns.
- Feather star are white, purple, brown, green. Or violet. Sea lily are white.
- HABITAT:
- Most sea lilies live in deep water and most feather star live on coral reefs.
- DIET:
- Both are planktonic
- **Qno41 Locomotion in Sea Cucumber? Long repeated**
- Sea cucumbers are mostly sluggish burrowers and creepers, although some swim by undulating

  their bodies from side to side.
- •Locomotion using tube feet is inefficient, because the tube feet are not anchored by body wall

- ossicles.
- ‘’Locomotion more commonly results from contractions of body-wall muscles that produce
- wormlike, locomotor waves that pass along the length of the body.
- One way that sea cucumbers can confuse or harm predators is by propelling their own toxic
- internal organs from their bodies in the direction of an attacker.

•The organs grow back, and it may save them from being eaten.

-

- **Q.no42 Do insects have memory?**
- Studies over the past century have discovered that many insects, like humans,
- acquire more than one type of spatial memory, that they acquire these memories at
- different rates and that, as they become more familiar with an environment, they
- change which memories they use
- **Q.no43 Sea lily and star?**
- PHYSICAL CHARACTERISTICS: Sea lilies have a stalk below the crown and
- look like flowers. Feather stars have a cluster of tentacles below the crown and look
- like ferns. Feather star are white, purple, and brown, green. Or violet. Sea lily are
- white.

- HABITAT: Most sea lilies live in deep water and most feather star live on coral
- reefs.
- DIET: Both are planktonic

- **Q.no44 Locomotion in Sea Cucumber?**

- Sea cucumbers are mostly sluggish burrowers and creepers, although some swim by

  undulating their bodies from side to side.
- •Locomotion using tube feet is inefficient, because the tube feet are not anchored by
- body wall ossicles. ‘’Locomotion more commonly results from contractions of body-
- wall muscles that produce wormlike, locomotor waves that pass along the length of
- the body. One way that sea cucumbers can confuse or harm predators is by propelling
- their own toxic internal organs from their bodies in the direction of an attacker. •The
- organs grow back, and it may save them from being eaten.
-

- **Q.no45 Synchronous Flight?**

- • Direct or synchronous flight is a mode of transportation that is fueled by wing
- muscles that insert directly into the wing base.

- • The insertion point of the wing is hinged which enables the muscles downward
- movements to lift the wing portion upward and upward movements pull the wing
- portion downward.

- **Q.no46 How cycliophores produce by asexually?**

- •It can reproduce asexually by producing a larva stage, called the Pandora that is
- released and settles on the same host.
- •Because of this asexual reproduction, large number of symbion can build up on one
- host.

- **Q.no47 Nervous System of Insects? Long repeated ?**

- The central nervous system consists of a series of ganglia that supply nerves to
- successive segments of the body. - The three main ganglia in the head
- (protocerebrum, deutocerebrum, and tritocerebrum) commonly are fused to form the
- brain. - The rest of the ganglionic chain lies below the alimentary canal against the
- ventral body surface. - - In most insects the number of separate ganglia has been
- reduced by fusion. The last abdominal ganglion always serves several segments. - In

- homopterans and heteropterans all the abdominal ganglia usually fuse with
- mesothoracic and metathoracic ganglia.

- **Qno48 How cycliophores produce by asexually?**
- •It can reproduce asexually by producing a larva stage, called the pandora, that is released and
- settles on the same host.
- •Because of this asexual reproduction, large number of symbion can build up on one host.
- **Qno49 Nervous System of Insects? Long repeated**
- - The central nervous system consists of a series of ganglia that supply nerves to
- successive segments of the body.
- - The three main ganglia in the head (protocerebrum, deutocerebrum, and
- tritocerebrum) commonly are fused to form the brain.
- - The rest of the ganglionic chain lies below the alimentary canal against the ventral
- body surface.
- - In most insects the number of separate ganglia has been reduced by fusion. The last

  abdominal ganglion always serves several segments.
- In homopterans and heteropterans all the abdominal ganglia usually fuse with
- mesothoracic and metathoracic ganglia

- **Qno50 Class Crinoidea: General Features?**
- - Stem and a crown consisting of a cup-like central body known as the theca.
- - Five rays or arms.
- - Mouth surrounded by feeding arms and is linked to a u-shaped gut.
- - Passive suspension feeders.
- - Dioecious
- - Gonads are located in the pinnules but few in the arms.
- **Qno.51 What are the Ossicles?**
- Series of overlapping skeletal plates known as ossicles.
- The echinoderm skeleton consists of a series of calcium carbonate plates called ossicles.
- **Qno52 What is Alarm pheromones?**
- Released to warn other individuals of danger; may cause orientation
- toward the pheromone source and elicit a subsequent attack or flight from the source.
- **Qno53 insect have memory?**
- Research has demonstrated that insects are capable of some learning and have a memory.
- For example, bees (order Hymenoptera) instinctively recognize flowerlike objects by their shape
- and ability to absorb ultraviolet light, which makes the center of the flower appear dark.
- **Qno54 Sea star regeneration?**

- Sea stars are well known for their powers of regeneration.
- •They can regenerate any part of a broken arm.
- •In a few species, an entire sea star can be regenerated from a broken arm if the arm contains a
- portion of the central disk.
- Regeneration is a slow process, taking up to a year for complete regeneration.

- **Qno.55 for stages of metamorphosis?**

Egg

- larva
- pupa
- adult

- **Qno56 What are pheromones?**
- Pheromones are chemicals an animal releases that cause behavioral or physiological changes in
- another member of the same species.
- •Zoologists have described many different insect uses of pheromones.

- **Qno57 Define vector?**
- A vector is a living organism that transmits an infectious agent from an infected animal to a
- human or another animal. Vectors are frequently arthropods, such as mosquitoes, ticks, flies,
- fleas and lice

- **Qno58 soil dwelling insect important?**

- Many other insects are also beneficial.
- •Soil-dwelling insects play important roles in aeration, drainage, and turnover of soil, and they
- promote decay processes.
- •Other insects serve important roles in food webs.
- •Soil-dwelling insects are hidden in the soil and hard to detect until the sudden appearance of
- damage creates the demand for rapid, curative treatment.

- **Qno59 Royal jelly?**
- Royal jelly is a honey bee secretion that is used in the nutrition of larvae, as well as adult queens.
- It is secreted from the glands in the hypopharynx of nurse bees, and fed to all larvae in the

  colony, regardless of sex or caste.

-

- **Q.no60 Sea star regeneration?**
- Sea stars are well known for their powers of regeneration.
- •They can regenerate any part of a broken arm.
- •In a few species, an entire sea star can be regenerated from a broken arm if the arm
- contains a portion of the central disk. Regeneration is a slow process, taking up to a
- year for complete regeneration.

- **Q.no61 Four stages of metamorphosis?**
- • Egg
- • Larva
- • pupa and
- • Adult.
- **Q.no62 What are the Pheromones?**
- Pheromones are chemicals an animal releases that cause behavioral or physiological
- changes in another member of the same species. •Zoologists have described many

different insect uses of pheromones.

Shab.e.taranum rahy ga ashkoon k ikhtasar tak

Iqbal

Phir bhe Khud ko tanha Pao to mujhy awaz Dena

Special Thanx to

Iqbal group of bs zoology

03460004097

❤Muhammad Iqbal arain ❤

Iq662038@gmail.com

Cooperated by Shaheen group of bs zoology

Talib-e-dua

Muhammad Iqbal arain from

Virtual university of Pakistan





Humaira Malik03460004097