

## ULTIMATE KCET CRASH COURSE 2026

## ZOOLOGY

DPP: 1

## Human Health and Diseases

- Q1** Select the correct statements regarding the characteristics of acquired immunity
- (i) Cell-mediated immunity and humoral immunity are responsible for acquired immunity
  - (ii) It produces a primary response of low intensity
  - (iii) Active immunity is a types of acquired immunity
  - (iv) Polymorphonuclear leucocytes and natural killer cells are involved in acquired immunity
- (A) (i), (ii) & (iii)  
(B) (i), (iii) & (iv)  
(C) (i) & (iv)  
(D) (i) & (iii) only
- Q2** Which of the following glands is large sized at birth but reduces in size with ageing?
- (A) Pineal (B) Pituitary  
(C) Thymus (D) Thyroid
- Q3** Alpha-interferons
- (A) activate the immune system  
(B) help in destroying the tumour  
(C) Both (A) and (B)  
(D) None of the above
- Q4** Opium is latex from unripe capsule of
- (A) Papaver somniferum  
(B) Datura stramonium  
(C) Solanum nigrum  
(D) Solanum tuberosum
- Q5** The term 'active immunity' means
- (A) increasing rate of heart beat.  
(B) increasing quantity of blood.  
(C) resistance developed after disease.  
(D) resistance developed before disease
- Q6** Neoplasm is
- (A) Nuclei with massive DNA  
(B) Cells without covering membranes  
(C) Cells capable of limited division  
(D) Newly produced cells formed through uncontrolled cell proliferation
- Q7** Injection of antitoxin in tetanus confers which type of immunisation?
- (A) Active immunisation  
(B) Passive immunisation  
(C) Auto-immunisation  
(D) Humoral immunization
- Q8** Colostrum, the first milk secretion of mammary gland is rich in immunoglobulin
- (A) IgE (B) IgM  
(C) IgA (D) IgG
- Q9** Which of the following statement is true regarding vaccination?
- (A) Vaccination is a method of active immunisation  
(B) Vaccination is a method of passive immunisation  
(C) Vaccination is a method of artificial passive immunisation  
(D) Vaccination is a method of natural passive immunisation
- Q10** AIDS is caused by HIV that principally infects:
- (A) all lymphocytes  
(B) activator B cells  
(C) cytotoxic T cells  
(D) T<sub>4</sub> lymphocytes



- Q11** Grafted kidney may be rejected in a patient due to  
(A) Passive immune response  
(B) Innate immune response  
(C) Humoral immune response  
(D) Cell-mediated immune response
- Q12** The addictive chemical present in tobacco is  
(A) caffeine  
(B) nicotine  
(C) catechol  
(D) carbon monoxide.
- Q13** The immunity conferred by T-lymphocyte is known as  
(A) Humoral mediated  
(B) Tissue mediated  
(C) Cell mediated  
(D) Neural mediated
- Q14** Read the following statements (I-IV).  
I. Pneumonia is caused by a virus.  
II. Pneumonia pathogen infects lung alveoli.  
III. Pneumonia is a communicable disease.  
IV. Lungs get filled with RBCs leading to severe problems in respiration.  
Which of the following statements are **correct** regarding pneumonia?  
(A) II and III only  
(B) III and IV only  
(C) I and IV only  
(D) I and II only
- Q15** Carcinoma refers to  
(A) benign tumours of the connective tissue  
(B) malignant tumours of the connective tissue  
(C) malignant tumours of the skin or mucous membrane  
(D) malignant tumours of the colon
- Q16** Which of the following is a pair of viral diseases?  
(A) Common cold, AIDS  
(B) Dysentery, common cold  
(C) Typhoid, tuberculosis  
(D) Ringworm, AIDS
- Q17** Infection of *Ascaris* usually occurs by  
(A) Drinking water containing eggs of ascaris  
(B) Eating imperfectly cooked pork  
(C) Tsetse fly  
(D) Mosquito bite
- Q18** Cancer is caused by  
(A) Uncontrolled meiosis  
(B) Uncontrolled mitosis  
(C) Rupturing of cells  
(D) Loss of immunity of the cells
- Q19** *W. bancrofti* infects which part of the human body?  
(A) Blood vessels of upper limbs  
(B) Lymph vessels of lower limb  
(C) Blood vessels of lower limb  
(D) Lymph vessels of upper limb
- Q20** Hashish and charas are obtained from  
(A) *Rauwolfia serpentina*  
(B) *Phytophthora*  
(C) *Papaver somniferum*  
(D) *Cannabis sativa*
- Q21** In autoimmune disorders, the cells  
(A) Produce more antibodies  
(B) Produce less antibodies  
(C) Have exaggerated immune response  
(D) Start attacking other body cells
- Q22** *Plasmodium* enters the human body as \_\_\_\_\_.  
(A) Merozoite  
(B) Trophozoite  
(C) Hypnozoite  
(D) Sporozoite



**Q23** Select the correct statement from the ones given below.

- (A) Barbiturates, when given to criminals, make them tell the truth.
- (B) Morphine is often given to persons, who have undergone surgery, as a pain killer.
- (C) Chewing tobacco lowers blood pressure and heart rate.
- (D) Cocaine is given to patients after surgery as it stimulates recovery.

**Q24** Antigen binding site in an antibody is found between

- (A) two light chains
- (B) two heavy chains
- (C) one heavy and one light chain
- (D) either between two light chains or between one heavy and one light chain depending upon the nature of antigen.

**Q25** Saline solution is given to patients of cholera because

- (A) Na<sup>+</sup> prevents water loss from body
- (B) NaCl function as regulatory material
- (C) NaCl produces energy
- (D) NaCl is antibacterial

**Q26** The use of *Cannabis* products (bhang, ganja, charas, marijuana or hashish) causes

- (A) Depression of brain activity and feeling of calmness
- (B) Alters thoughts, perceptions and feelings
- (C) Suppression of brain function and relieves pain
- (D) Stimulates the nervous system and increases alertness and activity

**Q27** Match **List-I** with **List-II**:

List-I		List-II	
(A)	Cellular barrier	(I )	Interferons
(B)	Cytokine barrier	(I I)	Mucus
(C)	Physical barrier	(I II )	Neutrophils
(D)	Physiological barrier	(I V )	HCl in gastric juice

Choose the **correct** answer from the options given

- (A) A-III, B-I, C-II, D-IV
- (B) A-II, B-III, C-IV, D-I
- (C) A-II, B-III, C-I, D-IV
- (D) A-III, B-IV, C-II, D-I

**Q28** Go through the table carefully and choose the **correct** option to complete the table.

Properties	Normal Cells	Cancerous Cells
Tumour formation	(a)	(b)
Contact inhibition	(b)	(a)
Mastastasis	(a)	(b)

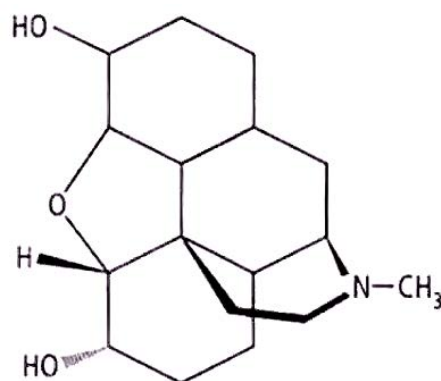
- (A) (a) Yes, (b) No
- (B) (a) No, (b) Yes
- (C) (a) No, (b) No
- (D) (a) Yes, (b) Yes



**Q29** A uremic patient went to the doctor. The doctor told him you need to transplant kidney for ultimate treatment, and he also told him that you need some procedures before this process. Choose the best option regarding which procedure the doctor is taking.

- (A) Tissue matching
- (B) Pedigree analysis
- (C) CT scan
- (D) X-ray

**Q30** The chemical compound whose chemical structure is given below is obtained from which plant?



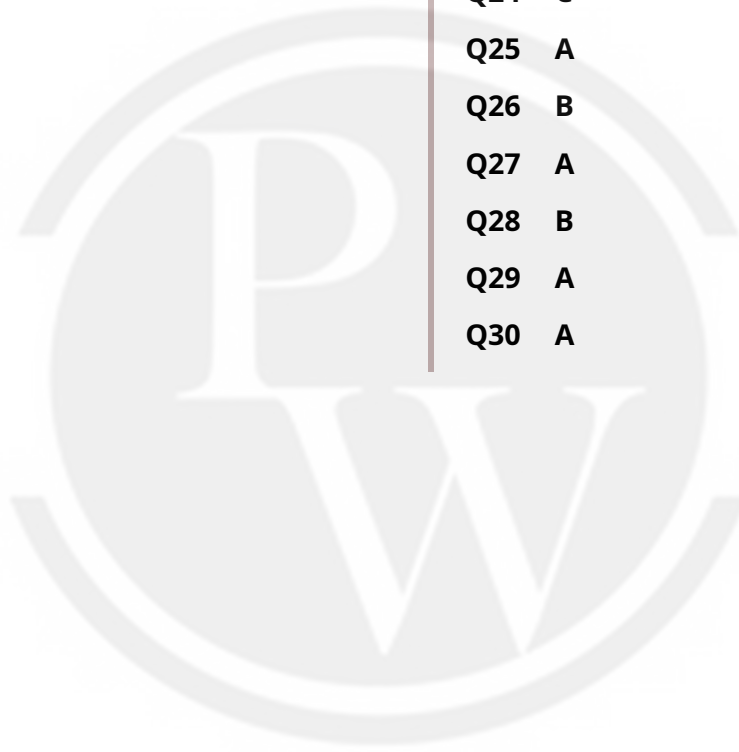
- (A) Papaver somniferum
- (B) Erythroxylum coca
- (C) Atropa belladonna
- (D) Cannabis sativa



# Answer Key

Q1 A  
Q2 C  
Q3 C  
Q4 A  
Q5 C  
Q6 D  
Q7 B  
Q8 C  
Q9 C  
Q10 D  
Q11 D  
Q12 B  
Q13 C  
Q14 A  
Q15 C

Q16 A  
Q17 A  
Q18 B  
Q19 B  
Q20 D  
Q21 D  
Q22 D  
Q23 B  
Q24 C  
Q25 A  
Q26 B  
Q27 A  
Q28 B  
Q29 A  
Q30 A



# Hints & Solutions

Note: scan the QR code to watch video solution

## Q1 Text Solution:

Statement (i), (ii) and (iii) are correct, while statement (iv) is incorrect.

Polymorphonuclear leucocytes and natural killer cells are involved in innate immunity.

These cells phagocytose and destroy microbes.

## Video Solution:



## Q2 Text Solution:

Thymus

## Video Solution:



## Q3 Text Solution:

Both (A) and (B)

## Video Solution:



## Q4 Text Solution:

Opium is a depressant and usually slows down body functions, usually taken by snorting and injection

It binds to specific opioid receptors present in the central nervous system and gastrointestinal tract of the body

Opioids include morphine, heroin and smack. These are white, odourless, bitter crystalline compounds obtained from the latex of poppy plant / *Papaver somniferum*

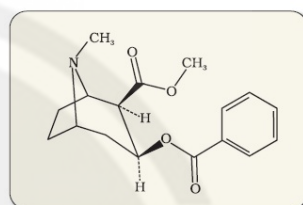


Figure 8.7 Chemical structure of Morphine



Figure 8.8 Opium poppy

## Video Solution:



**Q5 Text Solution:**

When a host is exposed to antigens, which may be in the form of living or dead microbes or other proteins, antibodies are produced in the host body. This type of immunity is called active immunity. Active immunity is slow and takes time to give its full effective response. Injecting the microbes deliberately during immunisation or infectious organisms gaining access into body during natural infection induce active immunity.

**Video Solution:****Q6 Text Solution:**

A neoplasm is a type of heterogeneous and excessive growth, called neoplasia of the tissue. Dangerous neoplasms are also inevitably referred to as cancer and are the focus of oncology. Prior to abnormal development of tissue, as in neoplasia, cells regularly experience abnormal patterns of growth, for example, metaplasia or dysplasia.

**Video Solution:****Q7 Text Solution:**

When ready-made antibodies are directly given to protect the body against foreign agents, it is called passive immunity. Injections provided against the tetanus is a passive immunization.

**Video Solution:****Q8 Text Solution:**

The yellowish fluid colostrum secreted by mother during initial days of lactation has abundant antibodies IgA to protect the infants.

**Video Solution:**

**Q9 Text Solution:**

The correct answer is option C that is Vaccination is a method of artificial passive immunisation .

Following a vaccination, a person might have a chance to develop a resistance to disease, sometimes known as artificial active immunity. An immunization is described as a process of becoming immune to a certain illness by the injection of a vaccine that consists either of attenuated pathogens or the dead toxoids .

And hence , this approach can also be used using dead microorganisms, microbe pieces, or treated microbial toxins.

Vaccinations are a common example of this type of active immunization, which are usually causing various issues in the past and even now over their safety.

And hence the answer.

**Video Solution:****Q10 Text Solution:**

AIDS virus infects  $T_4$  lymphocytes (also called Helper cells). Cytotoxic T cells called  $T_8$  lymphocytes.

**Video Solution:****Q11 Text Solution:**

Cell-mediated immune response (CMIS) consists of T-lymphocytes. It reacts against transplants. Transplantation may result in the rejection of the transplanted organs. The immune system recognises the protein in the transplanted tissue or organ as foreign and initiates cellular immunity against it.

**Video Solution:****Q12 Text Solution:**

nicotine

**Video Solution:****Q13 Text Solution:**

Cell mediated immune response.

**Video Solution:**

**Q14 Text Solution:**

Bacteria like *Streptococcus pneumoniae* and *Haemophilus influenzae* are responsible for the disease pneumonia in humans which infects the alveoli (air filled sacs) of the lungs.

**Video Solution:****Q15 Text Solution:**

Carcinomas are malignant growths of the epithelial tissue that cover or line body organs.

**Video Solution:****Q16 Text Solution:**

Common cold, AIDS

**Video Solution:****Q17 Text Solution:**

Infection of *Ascaris* usually occurs by drinking water containing eggs of *ascaris*.

**Video Solution:****Q18 Text Solution:**

It is caused by abnormal, excessive and uncontrolled mitosis.

**Video Solution:****Q19 Text Solution:**

Lymph vessels of lower limb

**Video Solution:****Q20 Text Solution:**

*Cannabis sativa*

**Video Solution:****Q21 Text Solution:**

Start attacking other body cells – Rheumatoid arthritis.

**Video Solution:**

**Q22 Text Solution:**

Sporozoite

**Video Solution:**



**Q23 Text Solution:**

Morphine is an potent opioid analgesic used mainly to relieve severe and persistent pain, particularly in terminally ill patients or who have undergone surgery. It also induces feelings of euphoria. It is administered by mouth, injection, or in suppositories. Common side-effects are nausea and vomiting, constipation, and drowsiness. With regular use, tolerance develops and dependence may occur.

**Video Solution:**



**Q24 Text Solution:**

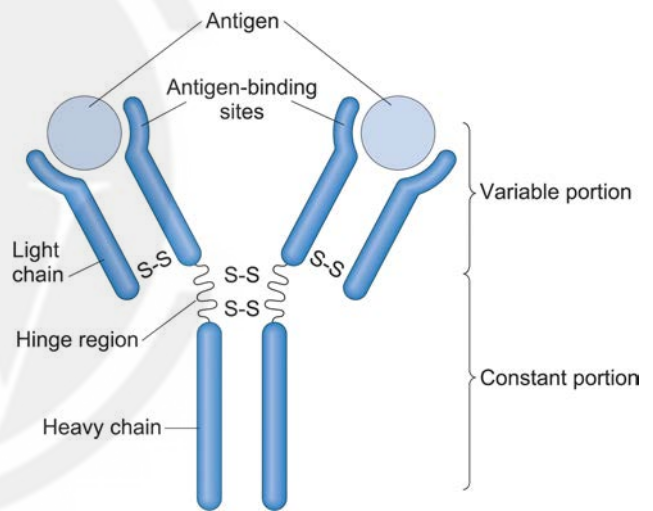
Antibodies have a 'Y' shaped structure. It consists of four polypeptide chains that are two heavy (*H*) chains and two light (*L*) chains.

The four polypeptide chains are joined together by disulfide bonds to form a 'Y' shaped structure.

Each chain of the antibody includes two distinct regions which are the variable region and the constant region.

Variable regions from each of the heavy and light chains constitute the antigen-binding site (called paratope).

This region of the antibody recognizes and binds to the specific antigen forming an antigen-antibody complex.



**Video Solution:**



**Q25 Text Solution:**

Na<sup>+</sup> prevents water loss from body

**Video Solution:**



**Q26 Text Solution:**

As we already know the use of *Cannabis* or tobacco products (bhang, ganja, charas, marijuana, or hashish) causes hallucinations i.e things seem real but are not real.

So consuming these drugs can alter our thoughts, perceptions, and feelings of the person.

Further, the depression of brain activity and feeling of calmness i.e less alertness is called by consuming tranquillisers.

However, Morphine cause suppression of brain function and serve as pain reliever.

Morphine are diacetylated products of heroin.

While stimulants stimulate the nervous system as their receptors are present in the brain.

These increase alertness and activity of a person e.g caffeine, nicotine.

**Video Solution:**



**Q27 Text Solution:**

List-I	List-II
Cellular barrier	Neutrophils
Cytokine barrier	Interferons
Physical barrier	Mucus
Physiological barrier	HCl in gastric juice

**Video Solution:**



**Q28 Text Solution:**

Tumor development

1. When cells age or become damaged, they die and are replaced by new cells.
2. Occasionally, this orderly process fails, and abnormal or damaged cells grow and multiply when they should not.
3. These cells can combine to form tumours, which are tissue lumps.
4. Tumors may or may not be cancerous (benign).

Inhibition of contact

1. Contact inhibition is the process by which cells stop growing when they come into contact with each other.
2. As a result, normal cells stop proliferating when they form a monolayer in a culture dish.
3. Contact inhibition is a potent anticancer mechanism that cancer cells lack.

1. Metastasis is the process by which cancer cells spread to other parts of the body.

2. When examined under a microscope and tested in other ways, metastatic cancer cells resemble primary cancer cells rather than cells in the location where the metastatic cancer is found.

**Video Solution:****Q29 Text Solution:**

Tissue matching, blood group matching are essential before undertaking any graft/transplant.

**Video Solution:****Q30 Text Solution:**

The chemical compound whose chemical structure is given below is obtained from *Papaver somniferum*. The drug obtained from *Papaver somniferum* is opium. Opium contains various alkaloids, including morphine, codeine, which are used for various medicinal purposes, such as pain relief and cough suppression.

**Video Solution:**

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