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Class: 12
Subject: Biology
Topic: Human health and diseases
No. of Questions: 20
Duration: 60 Min
Maximum Marks: 60

1. Works as a major nonspecific defense against viral infection
   A. Phagosome
   B. Interferon
   C. IgG
   D. IgE

Ans. B

Solution:

Interferons (IFNs) are proteins made and released by host cells in response to the presence of pathogens such as viruses bacteria, or parasites or tumor cells. They allow communication between cells to trigger the protective defenses of the immune system that eradicate pathogens or tumors

2. Insulin is
   A. Vitamin
   B. Lipid
   C. Hormone
   D. Enzyme

Ans. C

3. Lysis of foreign cells is mediated through
   A. IgM and IgG
   B. IgG and IgA
   C. IgA and IgD
   D. IgD and IgE

Ans.A

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4. A nonspecific immunity is
   A. Passive immunity
   B. Active immunity
   C. Innate immunity
   D. Autoimmunity

Ans. C

Solution:

nonspecific immunity that which does not involve humoral or cell-mediated immunity, but includes lysozyme and interferon
activity, etc.

5. Short lived immunity acquired by foetus/infant from mother through placenta/milk is
   A. Active immunity
   B. Passive immunity
   C. Cellular immunity
   D. Innate nonspecific immunity

Ans. B

6. The antigen present in pathogen is
   A. A specific protein involved in metabolism
   B. Polysaccharide synthesized by it in the
   C. A specific protein or p present on its coat
   D. Any of the two, A or B

Ans. C

Solution:

A coat protein is any protein that is a constituent of the capsid of a virus and is the first pathogen protein to be recognized by the
body as an antigen.

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7. A localized inflammatory response appears at the site of infection causing redness, swelling, pain and heat due too certain
chemicals. They are

A. Histamine and cerumen
B. Histamine and prostaglandins
C. Prostaglandins and cerumen
D. Ceruinen and mucus

Ans. B

These chemicals are produced by the mast cells in response to allergic reactions.

8. Primary lymphoid organs are

A. Lymphoid structures formed directly over the lymph vessels
B. Structures formed in the foetus
C. Structures where lymphocytes matur/under go preprocessing
D. Lymphatic structures where mature lymphocytes reside

Ans. C

Solution:

Primary lymphoid organs are those where the development and maturation of lymphocytes take place. Eg: bone marrow, thymus.

9. Active immunity is got from

A. Antibodies
B. Weakened germs in injection
C. Live germs in injection
D. Blood transfusion

Ans. B

Solution:

Vaccination.

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10. Homeostasis is maintained by
    A. Transport system
    B. Favourable changes in extracellular fluid
    C. Hormonal signals
    D. All the above

Ans. D

11. Opium is extracted from
    A. Atropa belladona
    B. Papaver somniferum
    C. Vinca rosea
    D. Azadirachta indica

Ans. B

Solution:

Opium is obtained from poppy plant or Papaver somnferum (family-Papaveraceae).

12. Which of the following is not hallucinogen?
    A. Heroin
    B. LSD
    C. Marijuana
    D. Charas

Ans. A

Solution:

Hallucinogens include LSD, marijuana, mescaline, psilocybin, bhang, ganja, hashish, charas, etc, while narcotic drugs include opium and its derivatives such as morphine, codeine, heroin, etc.

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13.Given below are four methods and their modes of action in achieving contraception. Select their correct matching from the four options given.

Method	Mode of Action
A. The pill	1. Prevents sperms reaching cervix
B. Condom	2. Prevents implantation
C. Vasectomy	3. Prevents ovulation
D. Copper-T	4. Semen contains no sperms

A.

A	B	C	D
3	1	4	2

B.

A	B	C	D
4	1	2	3

C.

A	B	C	D
3	4	1	2

D.

A	B	C	D
2	3	1	4

Ans. A
Solution:

Method	Made of Action
The pill	Prevents ovulation
Condom	Prevents sperms reaching cervix
Vasectomy	Semen contains no sperms
Copper-T	Prevents implantation

14. The truck drivers usually take
A. amphetamines
B. LSD
C. caffeine
D. morphine

Ans. A
Solution:
Amphetamines and cocaine are strong stimulants. Stimulants increase nerve activity in the brain by initiating the release of noradrenaline.

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15. In a graph of population, on x-axis time and on y-axis population is plotted. A parallel line to x-axis
shows

A. Natality increases mortality decreases
B. Natality equal to mortality
C. Natality decreases mortality increases
D. Natality constant mortality increases

Ans. B
Solution:
When the number of individuals added to the population (mortality) equals the number of individuals lost (mortality), the population remains constant or show zero population growth.

16. In which of the following, optical fibres are used?

A. Sonography
B. Endoscopy
C. MRI
D. CT-scan

Ans. B
Solution:
Endoscopy is a visual inspection and carrying out minor operations without cutting. It is done by instrument called endoscope. Its endoscope tube has optical fibres for transmitting light, an array of light sensitive cells that are called Charge Coupled Devices (CCD), at the tip of the tube and distant operated miniature surgical instruments.

17.Match the following columns and choose the correct combination from the given option.

Column I	Column II
A. Electro cardiography	1. To view within the body without cutting through overlying tissues
B. Endoscopy	2. A graphic recording of the electric activity of heart
C. MRI	3. A graphic recording of the electric activity of brain
D. Electro encephalography	4. A technique that gives anatomical images in multiple planes

A.

A	B	C	D
1	3	4	2

B.

A	B	C	D
1	2	4	3

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C.

A	B	C	D
2	3	4	1

D.

A	B	C	D
2	1	4	3

Ans. D
Solution:
PET is Positron Emission Tomography. It is a computerized imaging technique used for studying brain and heart functions through PET, it is possible to pinpoint the location of colour processing centres in the visual cortex of the brain using a radiopharmaceutical in target organ and photo-multiplier scintillating detectors.

Column I	Column II
Electro cardiography	A graphic recording of the electric activity of heart
Endoscopy	To view within the body without cutting through overlying tissues
MRI	A technique that gives anatomical images in multiple planes
Electro encephalography	A graphic recording of the electric activity of brain

18. Sphygmomanometer measures
    A. nerve conduction rate
    B. heart beat rate
    C. blood pressure
    D. pulse rate

Ans. B
Solution:
Blood pressure is measured in mmHg by an instrument known as sphygmomanometer. The instrument was invented by an Italian Doctor Riva Racci.

19. X-rays are used in
    A. ECG
    B. EEG
    C. CT-scan
    D. Endoscopy

Ans. C
Solution:
X-rays are used in CT-scan (computed tomographic scanning). It uses X-rays but employs a computer for reconstructing the image instead of directly recording it on a photographic film.

20. MRI is not allowed in the following conditions except one. Identify the exception
    A. Presence of pace-maker in the body
    B. Pregnant women
    C. Person suffering from stroke
    D. Presence of metallic plate in the body for treatment of broken bones

Ans. A
Solution:
MRI (Magnetic Resonance Imaging) is a non-invasive technique which uses strong magnetic field for generating resonance and low radio frequency in protons present in the body. MRI is not suitable for patients, with cardiac pace-makers, which can be adversely affected by the magnetic fields as can metallic clips or implants.