

PETIT SEMINAIRE HIGHER SECONDARY SCHOOL, PUDUCHERRY

21. HEALTH AND DISEASES

X^{std}

SELF – EVALUATION

BIOLOGY

I. Choose the best answer :

01. Tobacco consumption is known to stimulate secretion of adrenaline. The component causing this could be
a) **nicotine.**
02. World 'No Tobacco Day' is observed on
a) **May 31.**
03. Cancer cells are more easily damaged by radiations than normal cells because they are
d) **undergoing rapid division.**
04. Which type of cancer affects lymph nodes and spleen?
d) **Lymphoma.**
05. Excessive consumption of alcohol leads to
b) **cirrhosis of liver.**
06. Coronary heart disease is due to
d) **insufficient blood supply to heart muscles.**
07. Cancer of the epithelial cells is called
c) **Carcinoma.**
08. Metastasis is associated with
a) **Malignant tumour.**
09. Polyphagia is a condition seen in
b) **Diabetes mellitus.**
10. Where does alcohol effect immediately after drinking?
d) **Central Nervous System.**

II. State whether True or False. If False, write the Correct statement :

01. AIDS is an epidemic disease. **FALSE**
Correct Statement : AIDS is an **pandemic** disease.
02. Cancer causing genes are called Oncogenes. **TRUE**
03. Obesity is characterized by tumour formation. **FALSE**
Correct Statement : **Cancer** is characterized by tumour formation.
04. In leukemia both WBCs and RBCs increase in number. **FALSE**
Correct Statement : In leukemia **WBCs increase** in number.
05. Study of cause of disease is called etiology. **TRUE**
06. AIDS is not transmitted by contact with a patient's clothes. **TRUE**
07. Type 2 diabetes mellitus results due to insulin deficiency. **FALSE**
Correct Statement : **Type 1** diabetes mellitus results due to insulin deficiency.
08. Carcinogens are cancer causing agents. **TRUE**
09. Nicotine is a narcotic drug. **FALSE**
Correct Statement : Nicotine is a **not a** narcotic drug; **but an addictive drug.**
10. Cirrhosis is associated with brain disorder. **FALSE**
Correct Statement : Cirrhosis is associated with **liver** disorder.

III. Expand the following abbreviations :

01. IDDM – Insulin Dependent Diabetes Mellitus
02. HIV – Human Immuno-deficiency Virus
03. BMI – Body Mass Index
04. AIDS – Acquired Immuno Deficiency Syndrome
05. CHD – Coronary Heart Disease
06. NIDDM – Non-Insulin Dependent Diabetes Mellitus

IV. Match the following :

- | | | |
|---------------------------|-------|-------------------------------------------|
| 01. Sarcoma | ----- | connective tissue cancer |
| 02. Carcinoma | ----- | stomach cancer |
| 03. Polydipsia | ----- | excessive thirst |
| 04. Polyphagia | ----- | excessive hunger |
| 05. Myocardial infarction | ----- | lack of blood flow to heart muscle |

V. Fill in the blanks :

01. Cirrhosis is caused in liver due to excessive use of **alcohol**.
02. A highly poisonous chemicals derived from tobacco is **nicotine**.
03. Blood cancer is called **leukemia**.
04. Less response of a drug to a specific dose with repeated use is called **drug tolerance**.
05. Insulin resistance is a condition in **Type II** diabetes mellitus.

VI. Analogy type questions. Identify the first words and their relationship and suggest a suitable word for the fourth blank :

01. Communicable : AIDS; non-communicable : **Diabetes mellitus**
02. Chemotherapy : chemicals; Radiation therapy : **radiation**
03. Hypertension : Hypercholesterolemia; Glycosuria : **Hyperglycemia**

VII. Answer in a sentence :

01. What are psychotropic drugs ?
The drugs that act on the brain and alter the behaviour, consciousness, power of thinking and perception are referred as Psychotropic or mood altering drugs.
02. Mention the diseases caused by tobacco smoke.
Bronchitis, Pulmonary tuberculosis, Emphysema, Hypoxia, Oral cancer, Lung cancer, Gastric and Duodenal ulcers are the diseases caused by Tobacco smoke.

Q3. What are the contributing factors for Obesity?

Obesity is caused due to Genetic factors, Physical inactivity, Eating habits (over-eating), and Endocrine factors.

Q4. What is adult onset diabetes?

Type – 2 Non-Insulin Dependent Diabetes Mellitus develops slowly, usually milder and more stable in middle aged and older people. Hence, they are also called as Adult Onset Diabetes.

Q5. What is metastasis?

The process by which the cancerous cells migrate to distant parts of the body and affects new tissues is called Metastasis. The frequent sites of metastasis are lungs, bones, liver, skin, and brain.

Q6. How does insulin deficiency occur?

Type -1 Insulin Dependent Diabetes Mellitus is caused by the destruction of β -cells of the pancreas. Since β -cells of pancreas secrete Insulin, this results in deficiency of Insulin

VIII. Short answer questions :

Q1. What are the various routes by which transmission of human immune deficiency virus takes place? HIV is transmitted generally by :

- i) Sexual contact with infected person.
- ii) Use of contaminated needles or syringes.
- iii) Transfusion of contaminated / infected blood or blood products.
- iv) From infected mother to her child through placenta.

Q2. How is a cancer cell different from a normal cell?

Sl. No.	NORMAL CELL	CANCEROUS CELL
Q1.	They have normal small sized nucleus	They have large nucleus
Q2.	Nucleoli are less prominent	Nucleoli are very prominent
Q3.	They have fixed rate of multiplication	They can multiply indefinitely
Q4.	They do not invade surrounding tissues	They invade surrounding tissues
Q5.	They are well differentiated cells	They remain less differentiated

Q3. Differentiate between type 1 and type 2 diabetes mellitus?

<Refer Book page no. : 307; Table 21.1 fully>

Q4. Why is a dietary restriction recommended for an obese individual?

Even though Obesity is due to Genetic factors, physical inactivity, eating habits and endocrine factors; the major cause of Obesity is eating habits (overeating) and physical inactivity.

So, diet Management such as intake of low calorie, normal protein, vitamins and minerals, restricted carbohydrate and fat, a high fiber diet can prevent overweight or Obesity.

05. What precautions can be taken for preventing heart diseases?

The following precautions are necessary for preventing heart diseases :

Diet Management : Dietary modifications such as reduction in the intake of calories, low saturated fat and cholesterol rich food, low carbohydrates and common salt.

Diet rich in poly unsaturated fatty acids (PUFA) is essential.

Also increased intake of fibre diet, fruits and vegetables, protein, minerals and vitamins are required.

Physical activity : Regular exercise, walking and Yoga are essential.

Addictive substance avoidance : Alcohol consumption and smoking are to be avoided.

IX. Long answer questions :

01. Suggest measures to overcome the problems of an alcoholic.

<Refer Book page no. : 305; 21.6 “Rehabilitation measures for Alcoholics : fully (5 paragraphs)>

02. Changes in lifestyle is a risk factor for occurrence of cardiovascular diseases. Can it be modified? If yes, suggest measures for prevention.

Changes in lifestyle is a risk factor for occurrence of CardioVascular diseases. Yes. Of course, it can be modified by conscious efforts in our lifestyle such as :

- i) Reduction in the intake of calories (Carbohydrates), low saturated fat and cholesterol rich food, and common salt.
- ii) Diet rich in Poly Unsaturated Fatty Acids (PUFA) is essential.
- iii) Increase in the intake of fibre diet, fruits and vegetables, proteins, minerals and vitamins.
- iv) Regular exercise, walking and Yoga.
- v) Alcohol consumption and Smoking are to be avoided.

X. Higher Order Thinking Skills :

01. What is the role of fat in the cause of atherosclerosis?

- i) At first a fatty streak to a fibrous complicated PLAQUE is formed.
- ii) It leads to the narrowing of blood vessels leading to ATHEROSCLEROSIS in the large and medium sized arteries that supply oxygen to heart muscles.
- iii) This leads to deficiency of blood supply to heart muscles known as ISCHEMIA and ultimately results in MYOCARDIAL INFARCTION i.e., death of heart muscle tissues.

02. Eating junk food and consuming soft drinks results in health problems like obesity, still children prefer. What are the suggestions you would give to avoid children eating junk food / consumption of soft drinks?

- i) Children must be given healthy snacks or food such as Fruits, Nuts, Vegetables, Fresh juices (without added sugars), etc., from childhood from very young age.
- ii) They should be aware of the negative impact of Junk foods and Carbonated soft drinks.
- iii) Nowadays, some schools are maintaining their pupils to avoid junk foods via rules / instructions to the kids as well as to the parents.
- iv) The government must strictly screen the advertisements that promote junk foods as well as to encourage advertisements that promote Nutritious, Healthy kind of food and food products.
- v) Children can be provoked to eat Healthy and Nutritious food by the special ingredients that are added to it and the way it is presented to kids.

- Q3. Regular physical exercise is advisable for normal functioning of human body. What are the advantages of practicing exercise in daily life?

Regular Physical exercise in daily life can provide the following advantages :

- i) It helps to burn calories.
- ii) It helps to bring about weight balance.
- iii) Obesity can be avoided.
- iv) Brain gets refreshed.
- v) Regulates certain hormonal balances.
- vi) Reduces Stress / Anxiety / Depression, etc.,
- vii) To some extent immunity can be maintained.
- viii) Reduces the risk of certain Acute / Chronic - Contagious / Metabolic diseases/ disorders.

- Q4. A leading weekly magazine has recently published a survey analysis which says that number of AIDS patients in the country is increasing day by day. The report says that the awareness among the people about AIDS is still very poor. You are discussing the magazine report in your class and a team of your class decides to help people to fight against the dreadful disease.

- a) What problem you face when trying to educate the people in your village near by your school?

A set of people of the village may not be patient enough or feel shy to listen or being educated against Sexually Transmitted Diseases (STD). This is a sensitive issue to educate.

It may be difficult to use certain vernacular names (literally) before them; as they might not understand Scientific terms and concepts.

- b) How do you overcome the problem?

- ❖ These above said problems can be overcome by seeking the aid of Panchayat body or NGO workers who can make the people gather at a site and make them understand
- ❖ Advertisements / Film shows / Pamphlets / Posters, etc., can be prepared, which might be the easy way to impact a great awareness in them.

XI. Value based questions :

- Q1. Once a person starts taking drugs or alcohol, it is difficult to get rid of the habit. Why?

Once a person starts taking drugs or alcohol, it is difficult to get rid of the habit because, these substances pull an individual into a vicious cycle leading to regular abuse and dependency. A drug or alcohol modifies the physical, biological, psychological or social behaviour of a person by stimulating, depressing or disturbing the functions of the body and the mind. This condition is known as Addiction.

- Q2. Men addicted to tobacco lead to oxygen deficiency in their body. What could be the possible reason?

Smoking causes inflammation of throat and bronchi, leading to **Bronchitis** and **Pulmonary tuberculosis**. Smoking also leads to inflammation of lung alveoli, decrease surface area for gas exchange and cause **Emphysema**. Carbon monoxide of tobacco smoke binds to Haemoglobin of RBC and decreases its oxygen carrying capacity causing **Hypoxia** in body tissues.

- Q3. Name any three food that are to be avoided and included in the diet of a diabetic patient. Why should it be followed?

Foods to be included in the diet :

- i) Green leafy vegetables,
- ii) Vegetable oil, and
- iii) Whole grains (unpolished rice), Millets (Jowar, Bajra, Ragi)

Because, these foods are rich in fibre, proteins, Poly unsaturated fatty acid and have low carbohydrate content or more appropriate carbohydrates and complex sugars which helps in maintaining the sugar level in blood.

Foods to be avoided in the diet :

- i) Refined sugars (sucrose and glucose) – Fruit juices and Sweets, and
- ii) Saturated fatty acid – Animal fat.

Because, these foods are rich in simplest form of carbohydrates that increase the sugar level in blood. The animal fat contains more of Low Density Lipoprotein (LDL), which is harmful for Diabetic patients.

- Q4. How can informational efforts change people's HIV knowledge and behaviour?

Awareness of HIV helps people to :

- i) Screen blood before transfusion,
- ii) Ensure the use of disposable syringes, needles and razors in hospitals, clinics and in barber shops.
- iii) Living for a principle.

XII. Assertion and reasoning :

In each of the following questions, a statement of Assertion is given and a corresponding statement of Reason is given below mark the correct answer as

- a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
- b) If both Assertion and Reason are true that Reason is not the correct explanation of Assertion.
- c) Assertion is true but Reason is false.
- d) Both Assertion and Reason are false.

1. **Assertion** : All drugs act on the brain.

Reason : Drugs disturb the functioning of the body and mind.

- a) **If both Assertion and Reason are true and Reason is the correct explanation of Assertion.**

2. **Assertion** : Excretion of excess glucose in urine observed in a person with diabetes mellitus.

Reason : Pancreas is unable to produce sufficient quantity of Insulin.

- a) **If both Assertion and Reason are true and Reason is the correct explanation of Assertion.**