

BOARD SOLVED QUESTION
WITH ANSWER

Year : 2022
Subject : Social Pharmacy
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Subject In-Charge : Pankaj Kumar Rout



DO NOT WRITE ANYTHING ON YOUR QUESTION PAPER EXCEPT YOUR ROLL NO.
QUESTION PAPER CONTAINING ANYTHING WOULD BE TREATED AS MALPRACTICE

Full Mark -80

SOCIAL PHARMACY (Theory)

2229
Time -3 Hrs.

1. **Answer any 6 out of 7** (6 x 5)
 - a) What is SARS & its mode of transmission, Symptoms & treatment, Role of Pharmacist in prevention of the disease.
 - b) Write about the primary causes of air pollution. Describe the solid waste disposal process in brief
 - c) Discuss about RCH Programme and its major interventions in Phase-1.
 - d) Describe briefly on drug abuse & misuse.
 - e) Write the sources, functions & deficiency diseases due to fat soluble vitamin.
 - f) Describe briefly about causative agent, epidemiology, clinical presentation & prevention of poliomyelitis.
 - g) Write a detail note on role of pharmacist in Disaster management.
2. **Answer any 10 out of 11** (10x3)
 - a) Define social pharmacy. Explain briefly about the role of pharmacist in India's ongoing National Health Programme.
 - b) Define Pharmacoeconomics & explain its importance
 - c) Define the term "balanced diet" & give an overview of micronutrients.
 - d) Discuss about the Environmental pollution due to pharmaceuticals.
 - e) What is Artificial ripening, its effects, advantages and disadvantages.
 - f) Write a short note on sewage treatments.
 - g) What are the different stages of the demography cycle?
 - h) Write the causative agent, epidemiology & clinical presentation of Malaria.
 - i) Write down the function of Mid-day meal programme
 - j) What are the STDs. Focus on its epidemiological Factors
 - k) What are genetically modified foods? Describe the negative effects of it.
3. **A) Differentiate the followings** (20x1)
 - i) Immunity and immunization ii) Macronutrients and Micronutrient iii) Epidemic & Pandemic
 - iv) Marasmus & Kwashiorkor v) Multibacillary & Paucibacillary Leprosy

B) Answer the followings:

 - i) Write down the beneficial Effects of Fibre.
 - ii) Modes of Transmission of HIV/AIDS.
 - iii) Formulations of Mala-D Tabs.
 - iv) Write down the clinical presentation of Tuberculosis.
 - v) What is Health Maintenance Organisation.

C) Define the following:

i) Crude death rate	ii) Epidemiology	iii) Weaning	iv) Incubation period
v) Water Pollution	vi) Nosocomial infection	vii) Nutraceuticals	viii) Antisera
ix) Psychosocial pharmacy	x) Health according to WHO		

Social Pharmacy

12) what is SARS & its mode of transmission, symptoms & treatment.
Role of pharmacist in prevention of the disease.

- The SARS-CoV strain emerged in November, of 2002 in Guangdong province, China. The strain causes the disease severe acute respiratory syndrome.
- It serious disease which affects your ability to breathe.
- The World Health Organization named this atypical pneumonia severe acute respiratory syndrome because of its severity.

i) Causative Agent: corona virus

ii) Epidemiology:-

- SARS virus gets transmitted through respiratory droplets produced when an infected person coughs or sneezes.
- incubation period: 2-7 days and it may extend up to 14 days
- mode of transmission:-

* uninfected individuals can get infected by

a) Deposition of Respiratory Droplets:- Droplets released by infected individual after a cough get transmitted by air and deposit on mucous membranes of mouth, nose or eyes.

b) surface contact:- Healthy persons get infected on coming contact with surfaces or objects contaminated with infected droplets.

B) SARS transmitted by person-person contact, person living with infected person or taking care with infected one.

iii) Clinical presentation:-

- Initial symptoms:- cough, difficulty in breathing fever etc.
- Common symptoms:- chills, cough, fever, headache, muscle pain
- Less common symptoms:- cough with phlegm, diarrhoea sore throat, nausea, vomiting, runny nose, etc.

Role of pharmacist

- Isolate patient in hospitals and community.
- Provide protection to the medical and paramedical staff while handling patients.

→ Provide timely report and accurately.

→ Maintain proper hygienic conditions.

→ Washing the hands and used mask.

b) Write about the primary causes of air pollution.
Describe the solid waste disposal process in brief.

→ Air pollution is the contamination of air due to the presence of substances in the atmosphere that are harmful to the health of humans and other living beings, or cause damage to the climate to materials.

→ Causes of air pollution:-

→ Most air pollutants come from burning fossil fuels or plant material. Some are the result of evaporation from human-made materials.

→ Nearly half (49%) of air pollution comes from transportation 28% from factories and power plants, and the remaining pollution from a variety of other source.

i) Fossil fuels:- Fossil fuels are burned in most vehicles and power plants.

→ These pollutants include carbon monoxide, nitrogen oxide, sulfur dioxide and hydrocarbons.

ii) Biomass Burning:- Biomass is the total amount of living material found in an environment. The biomass of a rainforest is the amount of living material found in that rainforest.

→ The primary way biomass is burned is for 'slash-and-burn agriculture'.

→ The pollutants are much the same as from burning fossil fuels: CO_2 , carbon monoxide, methane, nitrous oxide and hydrocarbons.

Solid waste disposal process

→ Solid waste:- The term solid waste management mainly refers to the complete process of collecting, treating and disposing of solid wastes.

→ The process of waste handling and disposal varies in different countries, in India, the processes differ according to the source of solid waste. They can be classified as/

i) municipal solid waste

ii) Hazardous solid waste

- municipal solid waste can further be divided into biodegradable, recyclable and hazardous domestic wastes. The biodegradable waste includes vegetable peel and most wet kitchen waste. Recyclable waste includes plastic and batteries etc.
- The industry generated waste from chemical factories, medical waste from chemical factories, medical waste from hospitals are considered as Hazardous solid waste and they need special settings to dispose of them.
- Landfills are the most common method of disposing of solid wastes. modern-day landfills are designed by taking care of various environmental factors and types of wastes, so as to minimise pollution and health risks.
- method of disposal:
 - Dumping
 - Controlled tipping or sanitary Land-fill
 - Incineration
 - composting
 - manure pits
 - Burial

c) Discuss about RCH Programme and its major interventions in Phase-1.

- The reproductive and child Health programme was formally launched by government of India on 15th October, 1997. As per Recommendation of international conference on population and development held in Cairo in 1994.
- In ICPD at Cairo, fathallah, define RCH as "A state of complete, physical, mental, and social well being and merely the absence of disease, of infirmity in all matters relating to Reproductive system.
- "A state in which people have the ability to the reproduce and regulate their fertility are able to go through pregnancy and child birth.
- pregnancy is successful in terms of maternal and infant survival and well-being, and couples are able to have sexual relation free of the fear of pregnancy and of contracting disease".

Objectives-

- To permit the health of the mothers and children, ensure safe motherhood and child survival.
- The intermediate objective is to reduce IMR & MMR
- The ultimate objective is population stabilization through responsible.

Intervention of RCH-

- Prevention and management of unwanted pregnancy.
- Maternal care
- Child survival
- Prevention and management of STD
- Prevention of HIV/AIDS

RCH Programme phase-I

- Under the RCH Programme, phase-I various provisions were made to improve the status of maternal and child health. These include.
- provision of essential emergency and essential care.
- provision of equipment and drug kits to selected PHCs and selected PRUs in all districts.
- provision for additional ANM, staff nurses and laboratory technician for selected districts.
- provision for 24 hours delivery services at PHCs and CHCs.
- Referrable transport in case of obstetric complication.
- Immunization and oral rehydration therapy.
- prevention and control of vitamin A deficiency in children.

d) Describe briefly on drug abuse & misuse.

- Psychotropic are the substances which change brain function and result in alteration in perception, mood or consciousness.
- It leads to compulsive drug use despite negative consequences when used consistently excess.
- Common used psychotropic drugs are Anticoagulants, stimulants and depressants etc.

→ Narcotics:- Narcotics refers to any psychoactive compound with any sleep-including properties.

→ usually refers to opiates most commonly morphine, heroin and all derivative compounds found with raw opium latex.

→ Ex:- morphine, codeine, heroin and cocaine.

→ Alcohol:- Alcohol is the most widely used substance in the world. Alcohol is a potentially addictive substance.

→ Alcohol depresses the normal functions of the brain. In small amounts it seems to calm down and in higher amounts it causes talkativeness.

Impacts drugs abuse on social health:-

→ Risk to personal safety

→ Damage to health

→ Legal consequences

→ Destructive behaviour

→ Personal problems and difficulties at work

Impacts drug abuse on productivity:-

→ Alcohol and tobacco creates significant problems in the workplace. Constant attention, immediate memory and fine motor skills are easily disrupted by these habits.

→ Drug abusers have more absenteeism, lost productivity on the job.

→ Impacts of these habits on suicidal behaviour:-

→ Stress cause psychological distress like common depression and affective disorders. These factors may lead to person towards developing suicidal thoughts.

Prevention and control:-

→ Avoid undue peer pressure:- A child should not be pushed unduly to perform beyond his threshold limits, sports or other activities.

→ Education and counselling:- Education and counselling him to face problems and stress.

→ Looking for danger sign:- Parent, teachers even friends need to look for and identify the danger sign so that appropriate steps could be taken treatment.

→ Seeking professional and medical help:- Help from professional like psychiatrist and rehabilitation programmes can get rid of the problem and lead a healthy life.

Q. Write the sources, functions & deficiency disease due to fat soluble vitamin.

→ The fat-soluble vitamins are vitamins A, D, E and K. They are fat-soluble because they dissolve in fats and oils, and are absorbed and transported in a similar way to fats.

1) Sources of vitamin A :-

1. Animal sources - Liver, Eggs, Dairy products, fatty fish

2. Plant sources - Sweet potatoes, Carrots, fruits and fortified food

Functions of vitamin A :-

→ Vision and eye health

→ Immune system function

→ Skin and mucous membrane health

→ Reproductive health

→ Bone growth and development

Deficiency Diseases :-

→ Night blindness, Xerophthalmia, Impaired immune function, Skin problems, Reproductive issue and increase risk of Respiratory infections.

2) Sources of vitamin D :-

→ Sunlight exposure, fatty fish, milk, Yogurt, Fortified food, cod liver oil and supplements.

Functions of vitamin D :-

→ Bone health and Immune system Regulation

→ ~~Cell~~ growth and differentiation

→ Gene expression and Neurological function

→ Cardiovascular health.

Deficiency Diseases - Rickets, Osteomalacia, Osteoporosis, increased risk of fractures, weakened immune system and Cardiovascular Disease.

3) source of vitamin E - sunflower oil, olive oil, Almonds, Leafy greens, fatty fish and fortified food.

Functions of vitamin E -

→ Antioxidant properties

→ Cell membrane protection

→ Immune system support

→ Skin, hair and eye health

→ Cardiovascular health.

Deficiency Diseases! - Peripheral neuropathy, muscle weakness, vision impairment, Immune system dysfunction, skin problems and infertility.

1) sources of Vitamin K! - Leafy greens, Fermented foods, fatty fish, Egg yolk and fortified food

function of Vitamin K

→ Blood clotting and Bone mineralization

→ Cardiovascular health

→ Anti-inflammatory effects

→ Cell signaling

→ Tissue repair

Deficiency Diseases! - Bleeding disorders, Bone disorders,

Cardiovascular disease, Calcification of arteries and kidney stones.

1) Describe briefly about causative agent, epidemiology, clinical presentation & prevention of Poliomyelitis.

→ Causative agent! - Polio is a disease caused by poliovirus.

→ Epidemiology! -

→ Polio can affect your body differently depending on where the virus multiplies and attacks. Types of Polio include!

a) Abortive poliomyelitis causes flu-like and intestinal symptoms

b) Non-paralytic poliomyelitis may cause aseptic meningitis, a swelling of the area around your brain.

c) Paralytic poliomyelitis happens when poliovirus attacks your brain and spinal cord. It can paralyze the muscles that allow you to breathe, speak, swallow and move your limbs.

d) Poliоencephalitis is a rare type of polio that mostly affects infants. It cause brain swelling.

e) Post polio syndrome is when symptoms of polio come back years after a polio infection.

mode of transmission! -

a) Transmitted through fecal-oral route and droplet infection.

b) Poliovirus get into your body through your mouth. It makes more copies of itself in your throat and gut.

→ Clinical presentation:-

- a) symptoms of abortive poliomyelitis
- Abortive poliomyelitis symptoms are similar to many other illness. symptoms of abortive poliomyelitis include:
 - Fatigue, fever, headache, vomiting, diarrhea and sore throat
- b) symptoms of non-paralytic poliomyelitis:
 - Non-paralytic poliomyelitis starts with the same symptoms as abortive poliomyelitis. Symptoms of non-paralytic poliomyelitis include: Neck stiffness, pain falling in your arms & legs, severe headache.
- c) symptoms of paralytic poliomyelitis
 - paralytic poliomyelitis starts out with symptoms similar to abortive poliomyelitis. symptoms including: sensitivity to touch and muscle spasms.
- d) symptoms of poliomyelitis on their own or along with flu-like symptoms. symptoms include: Extreme tiredness, Anxiety, trouble focusing and seizures.

Role of pharmacist:-

- a) Guide about vaccination - Salk's vaccine and Sabine vaccine
 - b) Educate, promote and provide vaccination
 - c) Guide people regarding appropriate hand hygiene and general illness management.
 - d) Pharmacist should stay updated about recent cases
 - e) Recommend for isolation for appropriate period.
 - f) Guide people to protect water sources and food from contamination
 - g) Take measure to restrict flies.
 - h) Guide infected person about proper disposal of urine and feces.
- Q) Write a detail note on role of pharmacist in Disaster management?
- Disaster is defined as the sudden occurrence of a calamitous, usually violent, event resulting in substantial material damage, considerable displacement of people.

Advantages of Disaster Management:-

- Saves Lives! - Effective disaster management can save peoples lives.
- minimizes Economic Loss: Disasters can cause significant economic damage.
- Enhances Preparedness: - Regular drills and exercises can help people know what to do in the event of a disaster.
- Psychological Benefits: Knowing that there's a plan in place can provide a sense of security and reduce anxiety.

Role of pharmacists in disaster management:-

- pharmacists or other pharmaceutical personal have a history role in disasters.
- The role of pharmacists in community pharmacies and hospital setting can be seen during the current ongoing coronavirus disease disaster around the global.
- pharmacists are uniquely placed in the community to be of assistance to disaster-affected patients.
- they also provided additional information to patients having associated chronic diseases.
- pharmacist worked with other members of the healthcare team and refer patients chronic disease related issue to them.
- The unique situations disaster create require pharmacists to play nontraditional roles involving decision making in therapeutic protocols.
- They are positioned during disasters to provide healthcare continuity and medication management to affected communities.
- Taking medication histories.
- providing vaccinations
- performing basic medical checks.

2a) Define social pharmacy? Explain briefly about the role of pharmacist in India's ongoing National health program.

→ Social pharmacy is a multidisciplinary field that studies the role of medicine from a social, scientific and humanistic perspective. It combines pharmacy studies with theories and methods from the social, psychological, and humanistic disciplines.

The role of pharmacist:- HIV/AIDS Control Programme

→ HIV/AIDS Control program was the most well-known among the responding students Indian Pharmaceutical Association initiatives since 2000 in creating awareness on the roles and opportunities for pharmacist in HIV/AIDS care and prevention.

→ National Tobacco Control Programme:-

→ In this survey 90% of the pharmacy students were willing to take active role in Tobacco Control. Potential for Indian pharmacy students and pharmacist to make a definitive contribution to public health protection through NTCP should be utilized by the government of India.

→ National family welfare programme:- The aim of family welfare programme is to improve the quality of life through education, nutrition, health, employment, women's welfare and rights, shelter and safe drinking water.

b) Define pharmacoeconomics & explain its importance?

→ pharmacoeconomics is a field of study within health economics that evaluates the cost-effectiveness of pharmaceuticals and healthcare interventions. It involves analyzing the costs and outcomes associated with different treatment options.

Importance of pharmacoeconomics:-

→ Optimizing Resource Allocation: Helps allocate limited healthcare resource efficiently to maximize health outcomes.

→ Improving Patient Access: Identifies cost-effective treatments, ensuring access to effective therapies for patients.

→ supporting Evidence - Based medicine provides evidence on the economic value of treatments, guiding clinical decision-making

→ sustainability of Healthcare systems! Promotes sustainability by controlling healthcare costs while improving health outcomes.

→ patient-centered care! Encourages the use of treatments that offer the best value for patients in terms of health benefits relative to costs.

c) Define the term "balanced diet" & give an overview of micronutrients.

→ Balanced diet is one that gives your body the nutrients it needs to function correctly. To get the proper nutrition from your diet, you should consume fresh fruits, fresh vegetables, whole grains, Nuts and Lean Proteins.

→ macronutrients are nutrients that the body needs in large amounts. They provide the energy necessary for growth, metabolism, and other bodily functions. There are three primary macronutrients!

1. Carbohydrates:- fruits, vegetables, grains, and dairy products
function:- main source of energy for the body

TYPE:- simple carbohydrates and complex carbohydrates.

2. Proteins:- meat, poultry, eggs, nuts and seeds

function:- Essential for building and repairing tissues.

Amino acid. Proteins are made up of amino acid.

3. Fats:- oils, butter, nuts, seeds and fatty fish

function:- provide energy, support cell growth, protect organs.

TYPE:- saturated fats, unsaturated fats and trans fats.

d) Discuss about the environmental pollution due to pharmaceuticals.

- Pharmaceutical companies' release the harmful gaseous like carbon dioxide, nitrous oxide, methane, etc. which affects the air and cause the air pollution. Due to air we face many problem like respiratory diseases, stroke, brain disease.
 - when the pharmaceutical wastes are thrown in the soil then its chemical directly involved in soil and causes the pollution and affects the productivity.
 - pharmaceutical drainage directly affects the water and cause the water pollution. Due to pollution many disease borne like diarrhoea, cholera, dysentery, typhoid, and poliomyelitis etc.
 - In pharmaceutical companies machinery work performs which produced loud noise and cause the noise pollution.
 - many radioactive materials are released by the pharmaceutical company like X-Ray, gamma-Ray, heavy metal ion etc. which directly affects the health and causes the chronic disorders.
- e) what is Artificial ripening its effects, advantages and disadvantages?

→ Artificial ripening involves the use of chemicals or other methods to hasten the ripening process of fruits and vegetables. This practice can extend shelf life. It has several effects on health, the environment, and the quality of the produce.

Advantages:-

- Extend shelf life: Artificial ripening helps maintain fruit quality and extends shelf life.
- Reduced Transportation Costs: Ripening can occur during transportation, reducing costs.

- Better Storage: Artificially ripened fruits can be stored for longer periods.
 - Improved flavour and texture: Artificial ripening can enhance flavour and texture.
- Disadvantages:-

- Chemical Residues: Artificial ripening agents can leave chemical residues.
- Health Risks: Exposure to ripening agents has been linked to health issues.
- Reduced Nutritional value: Ripening agents can break down nutrients and vitamins.
- High costs: Artificial ripening methods can be expensive.

Q) Write a short note on sewage treatment.

→ Sewage treatment is the process of removing pollutants and contaminants from wastewater, making it safe for discharge into the environment.

→ Sewage treatment carried out in two stages.

i) Primary treatment ii) Secondary treatment

→ Primary treatment:- In this large solids and grit are removed by filtration and sedimentation.

→ Initially floating debris is removed by filtration. All solids that settle form the primary sludge and the supernatant forms the effluent. The effluent from primary settling tank is taken for secondary treatment.

→ Secondary treatment:- Several methods are considered tank method, trickling filter method and activated sludge system.

→ Activated sludge system:- The primary effluent is passed into large aeration tanks where it is constantly agitated mechanically and air is pumped into it. This allows growth of aerobic microbes into flocs. While growing these microbes consume organic matter in the effluent. This reduces the biochemical oxygen demand of the effluent.

Q) What are the different stages of demography cycle?

- High stationary stage:- This stage is characterized by a high birth rate and high death rate, no any change in size and population. India was in this stage till 1920.
- Early expanding stage:- The death rate begins to decline and birth rate no change, initial increase in population.
- Late expanding:- The birth rate begins to decline while the death rate still decreases, continue increase in population.
- Low stationary stage:- This stage is characterized by a low birth rate & low death rate, stable in population.
- Declining stage:- In the declining stage birth rate is lower than the death rate, fall in population.

h) write the causative agent, epidemiology & clinical presents of malaria.

- Malaria is caused by a single-celled parasite of the genus *Plasmodium*.
- Epidemiology:- Malaria is life-threatening disease caused by parasites that are transmitted to people through the bites of infected female *Anopheles* mosquitoes. It is preventable and curable.
- The estimated number of malaria deaths stood at 627 000 in 2020.

→ clinical presentation:- fever.

- Chills
- general feeling of discomfort
- Headache
- Nausea and vomiting
- Diarrhea
- Abdominal pain
- muscle or joint pain.

- i) write down the function of mid-day meal programme.
- The mid-day meal programme is a school meal programme implemented by the Government of India to provide nutritious meals to school-going children.
- Functions:-
- Provide nutritious meals to children in government and government-aided schools.
 - Improve attendance and retention rates.
 - Enhance learning abilities and cognitive development.
 - Reduce hunger and malnutrition.
 - Foster social equity and inclusiveness.
 - Support education and health goals.
 - Monitor and evaluate programme effectiveness.
 - Improve learning outcomes and better nutritional status.

j) what are the STDs. focus on its epidemiological factors.

- STDs are included in a variety of health topics, including AIDS, syphilis, HIV, genital herpes, Gonorrhoea, Chlamydia and Hepatitis B.

Epidemiology:-

- Source of infection: The most common route of transmission is via contact with an infected person's sores during sexual intercourse. Bacteria enter the body through minor cuts on the mucous membranes.
- Infected period: 10 days to 3 months
- Age and sex: Highest rates among women were among those aged 20-29 years and those aged 25-29 years.
- Incubation period: 21 days.

Q) What are genetically modified foods? Describe its negative effects of it.

Genetically modified foods are derived from organisms whose genetic material (DNA) has been modified by using modern biotechnology, gene technology, recombinant DNA technology and genetic engineering.

Types of genetically modified foods:-

→ Virus resistant crops, Nutritionally enhanced crops, Fast-growing fish and long-lasting fruits and vegetables.

Negative effects of genetically modified food:-

- Allergic reactions
- Digestive issues
- Immune system suppression
- Reproductive problems
- Loss of biodiversity
- water & soil pollution
- Increased pesticide use

3) Immunity:- The body's natural ability to fight off disease-causing organisms like bacteria & virus.

Immunization:- The process of introducing a vaccine into the body to stimulate the immune system and produce protection from a specific disease.

ii) Macronutrients:- These nutrients are needed in large quantities and provide the body with energy. They include carbohydrates, fats and protein.

Micronutrients:- These nutrients are needed in smaller quantities. They include minerals & vitamins.

iii) Epidemic:- An outbreak of disease in a specific geographic area, such as a city or region.

Pandemic:- A widespread outbreak of a disease across multiple countries or continents.

iv) Marasmus:- A deficiency of all macronutrients, including protein, carbohydrates, and fats. People with marasmus are deprived of calories in general either because they are eating too little or too many.

Kwashiorkor:- A predominantly protein deficiency, but people with kwashiorkor may not be deprived of calories in general.

v) Multibacillary:- Multibacillary leprosy refers to a type of leprosy characterized by a large number of skin lesions, often with nerve involvement, and a positive skin smear test, indicating the presence of high bacterial load within the affected area.

Paucibacillary leprosy:- A mild, less severe form of leprosy. People with this type have only one or few patches of flat, pale-coloured skin. The affected area of skin may feel numb because of nerve damage underneath.

Bi) Write down the beneficial effect of fibre.

→ Prevent or relieve constipation and fibre can help lower cholesterol levels.

ii) Modes of Transmission of HIV/AIDS

→ HIV is spread from the body fluids of an infected person, including blood, breast milk, semen & vaginal fluid.

iii) Formulations of Mala-D Tabs.

→ Combination of two hormonal medicine, desonogestrel and ethinyl estradiol.

- ii) write down the clinical presentation of tuberculosis.
- Malaise, fever, weight loss, sweats, anorexia.
- iii) what is Health Maintenance Organisation.
- Health Maintenance Organisation is a health insurance plan that offers a network of health care providers for a prepaid cost.

ii) Crude death rate - The crude death rate is a vital statistic that measures the number of deaths in a given population over a specific period of time.

iii) Epidemiology - Epidemiology is the study of how diseases and other health issues spread through populations and how to prevent and control them.

iii) weaning - weaning is the process of switching an infant's diet from breast milk or formula to other food and fluids.

iv) Incubation period - Incubation period is the time between exposure to an infectious disease and the onset of symptoms.

v) water pollution - Water pollution is the contamination of water bodies, such as rivers, lakes, oceans and ground water by harmful substances.

vi) Nosocomial infection - Nosocomial infections are infections acquired during the process of receiving health care that was not present during the time of admission.

vii) Nutraceutical - Nutraceutical can be defined as a food or part of a food that provides medical or health benefits, including the prevention and treatment of a disease.

viii) Antiserum - Antiserum is a type of serum that contains antibodies. These antibodies are proteins produced by the immune system in response to the presence of foreign substances, such as bacteria and viruses.

ix) Psychological pharmacy - Psychological pharmacy focuses on the psychological and social factors influencing medication health behaviors and patient-provider interactions.

x) Health according to WHO - WHO defines health as a state of complete physical, mental, and social well-being and not just the absence of disease or infirmity.

College of Pharmacy