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**Final examination**

**QUESTIONS**

1. **What is Sanitation and Hygiene?**

Sanitation is the effective use of tools and actions that keep our environment healthy. These include latrines or toilets to manage waste, food preparation, washing stations, effective drainage and other such mechanisms. It is a safe disposal of human excreta, proper drainage of waste water including hazardous waste and proper vector control.

Hygiene is a set of personal practices that contribute to good health. It includes things like hand-washing, bathing and cutting hair/nails. Hand-washing is the single most important activity we can all do to encourage the stop of disease.

Hygiene refers to acts that can lead to good health and cleanliness, such as frequent hand washing, face washing, and bathing with soap and water. Keeping hands clean is one of the most important ways to prevent the spread of infection and illness.

The difference is subtle but important. While both sanitation and hygiene are related, we must be taught both effective tools and effective behaviors to protect our health.

1. **Why are water, sanitation, and hygiene important?**

Access to improved water and sanitation facilities does not, on its own, necessarily lead to improved health. There is now very clear evidence showing the importance of hygienic behavior, in particular hand-washing with soap at critical times: after defecating and before eating or preparing food. Hand-washing with soap can significantly reduce the incidence of diarrhea, which is the second leading cause of death amongst children under five years old. In fact, recent studies suggest that regular hand-washing with soap at critical times can reduce the number of diarrhea bouts by almost 50 per cent.

Good hand-washing practices have also been shown to reduce the incidence of other diseases, notably pneumonia, trachoma, scabies, skin and eye infections and diarrhea-related diseases like cholera and dysentery. The promotion of hand-washing with soap is also a key strategy for controlling the spread of Avian Influenza (bird flu).

The key to increasing the practice of hand-washing with soap is to promote behavioral change through motivation, information and education. There are a variety of ways to do these including high-profile national media campaigns, peer-to-peer education techniques, hygiene lessons for children in schools and the encouragement of children to demonstrate good hygiene to their families and communities. It is also true that without water there is no hygiene. Research shows that the less readily available water is, the less likely that good hygiene will be practiced in households.

Access to safe water and adequate sanitation, together with good hygiene practices, can reduce the transmission of some NTDs, for example trachoma and intestinal worms. Trachoma is transmitted by flies, fomites (e.g. skin, hair, clothing, or bedding) and direct contact. Preventing transmission of trachoma can be achieved through access to clean water, appropriate hygiene practices that promote face washing, and access to proper sanitation for the disposal of human waste. Intestinal worms, which affect nearly 900 million people worldwide, is most prevalent in communities where people have inadequate access to toilets and/or hand washing facilities. Worms are transmitted through faecal-oral contact or enter through the skin of the feet in areas of open defecation. Access to safe water and adequate sanitation will help communities affected by both trachoma and soil-transmitted helminths (STH) to escape from the perpetual cycle of infection and reinfection.

1. **What is open defecation?**

Open defecation (OD) is the human practice of defecating outside (in the open environment) rather than into a toilet. People may choose fields, bushes, forests, ditches, streets, canals or other open space for defecation. They do so because either they do not have a toilet readily accessible or due to traditional cultural practices. The practice is common where sanitation infrastructure and services are not available. Even if toilets are available, behavior change efforts may still be needed to promote the use of toilets.

Open defecation can pollute the environment and cause health problems. High levels of open defecation are linked to high child mortality, poor nutrition, poverty, and large disparities between rich and poor.

Ending open defecation is an indicator being used to measure progress towards the Sustainable Development Goal Number 6. Extreme poverty and lack of sanitation are statistically linked. Therefore, eliminating open defecation is thought to be an important part of the effort to eliminate poverty.

1. **What is Sanitation Marketing?**

Sanitation marketing is an emerging field that applies social and commercial marketing approaches to scale up the supply and demand for improved sanitation facilities.

While formative research is the foundation of any sanitation marketing program, essential to understanding what products the target population desires and what price they’re willing to pay for them, components such as the marketing mix, communications campaign, and implementation are also critical to the design and implementation of effective program.

1. **What are some of the biggest challenges you face in teaching hygiene and sanitation?**

A number of challenges and barriers to good hygiene exist in lower income countries. The greatest of these challenges is the lack of clean water. Hundreds of millions of people do not have access to improved sources of drinking water; worldwide, there are 1.6 million deaths per year attributed to diseases spread through unsafe water, poor sanitation, and lack of hygiene.

However, even under circumstances where clean water is not available, evidence indicates that hygiene practices using unsafe water are beneficial to reducing the spread of disease and are better than not washing at all. When access to safe water is poor, the Centers for Disease Control and Prevention recommends using unsafe water in the same manner as safe water for hygiene practices, to clean hands before eating, after using the toilet, and at other key times.

In addition to water, another hygiene challenge in lower income countries is access to soap. Even when soap is available, it is typically used for laundry and bathing instead of for hand washing. A number of international programs focus on teaching the importance of using soap to wash hands.

One innovation designed to provide a simple, economical, and effective hand-washing station to communities in lower income countries is the tippy tap. These devices use significantly less soap and water than other, traditional means of hand washing. In water-scarce settings, employs the use of tippy taps for hand washing.

Cultural factors

Indeed, beyond individual motivations, further potential barriers referred to in the international literature are cultural factors which make the intended beneficiaries of sanitation and hygiene promotion projects reticent or resistant to new facilities. Cultural difference arises from gender: variations in the perspectives of women and men on sanitation facilities are noted by many commentators. The views of adults and children vary too. Household circumstances are also diverse. Different ethnic groups may have varying beliefs and customs, while attitudes to sanitation and hygiene may vary substantially between urban and rural contexts.

1. **What is sustainable sanitation?**

Sustainable sanitation is a sanitation system designed to meet certain criteria and to work well over the long-term. Systems need to be economically and socially acceptable, technically and institutionally appropriate and protect the environment and natural resources

The main objective of a sanitation system is to protect and promote human health by providing a clean environment and breaking the cycle of disease.

Most sanitation systems have been designed with these aspects in mind, but they fail far too often because some of the criteria are not met. In fact, there is probably no system which is absolutely sustainable. The concept of sustainability is more of a direction than a state to reach. Nevertheless, it is crucial that sanitation systems are evaluated carefully with regard to all dimensions of sustainability.

Since appropriateness to the context is such a core criterion for sustainable sanitation, there is no one-size-fits-all sanitation solution. However, taking into consideration the entire range of sustainability dimensions, it is important to observe some basic principles when planning and implementing a sanitation system.

**Health and hygiene**

Includes the risk of exposure to pathogens and hazardous substances that could affect public health at all points of the sanitation system, from the toilet via the collection and treatment system, to the point of reuse or disposal and downstream populations.

This dimension also includes hygiene aspects as well as possible impacts on nutrition and health resulting from the application of a certain sanitation system.

**Environment and natural resources**

Includes issues such as the water, energy and other natural resources required for construction, operation and maintenance of the system, as well as the potential emissions to the environment resulting from use. Also includes aspects of safe recycling and reuse of excreta (and any associated effects, for example reusing wastewater, returning nutrients and organic material to agriculture).

Furthermore, it includes effects on consumption of non-renewable resources, for example excreta-derived biogas replacing fossil fuel use.

Technology and operation Incorporates the functionality of the system, and the extent to which the entire system – including collection, transport, treatment and reuse and final disposal – can be constructed, operated and monitored by the local community or the technical teams of the local utilities.

Furthermore, the robustness of the system, its vulnerability to power cuts, water shortages, floods, etc. are also included in this criterion. Finally, the flexibility and adaptability of its technical elements to the existing infrastructure, geology, and projected demographic and socio-economic developments should also be taken into account.

**Financial and economic issues**

This dimension includes the capacity of households and communities to finance the sanitation system, including the construction, operation, maintenance and necessary reinvestments in the system. In such calculations, direct benefits – for example income or savings from recycled products – and external costs and benefits have to be taken into account alongside such direct costs.

The external costs might include environmental pollution and health hazards. Benefits may include increased agricultural productivity and subsistence economy, employment creation, improved health and reduced environmental risks.

**Socio-cultural and institutional aspects**

The criteria in this category evaluate if the sanitation system is socio-culturally acceptable and appropriate for the users. Further considerations include the following aspects: Convenience, perceptions, gender issues, religious or cultural issues, impacts on human dignity, compliance with the legal framework, and stability of institutional settings.

1. **What are the steps for planning and implementing a successful WASH behavior change campaign?**

When developing behavior change interventions, use theory and evidence, take a systems approach, and improve participation in the intervention. Planning behavior change interventions is a step-by-step process, wherein each step builds on those preceding it. These are the steps taken when planning for behavior change campaign.

**Step 1: Building a Behavior Support Team**

PBS begins by developing a team of the key stakeholders or individuals who are most involved in their future lives. This team should include the family and early educator, but also may include friends, other family members, therapists, and other instructional or administrative personnel. Team members collaborate in multiple ways in order to develop, implement, and monitor a support plan.

**Step 2: Person-Centered Planning**

Person-centered planning provides a process for bringing the team together to discuss their vision and dreams for their future. Person-centered planning is a strength-based process that is a celebration and a mechanism of establishing the commitment of the team members to supporting themselves and their families.

One of the key features of positive behavior support for young children with problem behavior and their families is a commitment to a collaborative team approach. This is especially important for children whose problem behavior occurs in multiple settings such as the home, preschool, therapy visits, etc.

**Step 3: Functional Behavioral Assessment**

Functional assessment is a process for determining the function of the people problem and behavior. Functional Assessment or Functional Behavioral Assessment (FBA) involves the collection of data, observations, and information to develop a clear understanding of the relationship of events and circumstances that trigger and maintain problem behavior.

**Step 4: Hypothesis Development**

The functional assessment process is completed with the development of a behavior hypothesis statement. The behavior hypothesis statements summarize what is known about triggers, behaviors, and maintaining consequences and offers an informed guess about the purpose of the problem behavior.

Once a functional assessment is complete, the next step is to develop a hypothesis statement.

Once the behavior support team identifies its hypotheses, attention should be paid to the way by which hypotheses are written. They should be carefully written either as a series of sentences that include each component.

**Step 5: Behavior Support Plan Development**

Once behavior hypotheses statements are developed to summarize the data gathered from the functional assessment process, the team can develop a behavior support plan. Essential components of the behavior support plan are prevention strategies, the instruction of replacement skills, new ways to respond to problem behavior, and lifestyle outcome goals.

The behavior support plan represents the culmination of the assessment process. Typically developed in connection with person-centered planning, the behavior support plan is the team’s action plan outlining the specific steps to be used to promote the child’s success and participation in daily activities and routines. In order to be most effective, behavior support plans should be both carefully developed and clearly written using plain language, incorporate the values of the family and support team, identify any prerequisite resources and training needs for implementation, and include individual components that are both easy to use and easy to remember.

**Step 6: Monitoring Outcomes**

The effectiveness of the behavior support plan must be monitored. This monitoring includes measurement of changes in problem behavior and the achievement of new skills and lifestyle outcomes.

Once people’s behavior support plan is developed, the behavior support team’s role is both to implement the plan itself and to monitor progress toward outcomes valued by the communities. The keys to successful outcomes are frequent data collection and consistency—relative not only to both when, where, and who implements the plan but also to how the plan is implemented.

**What are the challenges faced by WASH Projects in Africa?**

Poverty in Africa is often caused by a lack of access to clean, safe water and proper sanitation. There are a number of reasons why poverty has become an epidemic in Africa. Poverty can be the result of political instability, ethnic conflicts, climate change and other man-made causes.

75% of Africa's drinking water comes from groundwater and is often used with little or no purification. Water contaminated by microbiological pollutants spread diseases such as dysentery, cholera and typhoid.

Diseases such as AIDS, malaria or Ebola are the cause but also the result of poverty in Africa. Lack of education and inadequate medical care in many regions means that diseases spread faster and cannot be treated. The average life expectancy of the population is decreasing and the number of orphans is increasing.

In South Africa the scarce fresh water is decreasing in quality because of an increase in pollution and the destruction of river catchments, caused by urbanization, deforestation, damming of rivers, destruction of wetlands, industry, mining, agriculture, energy use, and accidental water pollution.

About 66% of Africa is arid or semi-arid and more than 300 of the 800 million people in sub-Saharan Africa live in a water-scarce environment – meaning that they have less than 1,000 m3 per capita per year. 115 people in Africa die every hour from diseases linked to poor sanitation, poor hygiene and contaminated water

Waterborne diseases are caused by drinking contaminated or dirty water. Contaminated water can cause many types of diarrheal diseases, including Cholera, and other serious illnesses such as Guinea worm disease, Typhoid, and Dysentery.

The United Nations reports nearly 850,000 people die every year from lack of access to good water, sanitation and hygiene. This includes more than 360,000 children under age five who die from diarrhea and many others from diseases such as cholera, dysentery, hepatitis A and typhoid.

**Lack of information**

Problems may be caused in many developing countries by lack of recent, reliable information on the condition of existing sanitation and hygiene infrastructure, including whether or not it is actually functioning. Official statistics on sanitation coverage are often inconsistent or even hopelessly inflated. Needs and demands, particularly in more remote rural areas, are frequently unknown, making the task of setting a coherent and balanced agenda more difficult.

**Lack of coordination**

Other commentators point to the lack of clarity in some developing countries over who or which institutions are responsible for which of the WASH functions.

The most commonly adopted arrangement is that the institutional ‘home’ of sanitation is located within ministries of water. A second option can be to place sanitation within the remit of the ministry of health. Another possibility might conceivably be a separate ministry for sanitation.

Since, however, the range of water, sanitation and hygiene-related activities is so wide, searching for ‘the right institutional home’ may not be fruitful. Arguably more important is establishing links between institutions, e.g. via planning processes which bring together departments from several responsible ministries.

**Lack of political and budgetary priority, lack of demand**

A limiting factor commonly evoked is lack of funds for investment. Both water and sanitation have been losing out to other sectoral interests in the competition for scarce public funds. For example, other ‘social’ sectors, such as education and health, attract much larger budgetary allocations than water, and sanitation and this shows that this sector was especially under-funded. It prompts the question as to whether the political will exists to increase budget priority of sanitation.

**Lack of human and technical capacity**

In many developing countries a lack of capacity in terms of human resources inhibits development, particularly at a decentralized level. The multi-faceted nature of WASH means that a wide range of different disciplines and skills is required to improve sanitation and hygiene provision. While the water sector has tended to be ‘dominated by engineers who feel comfortable with technical problems and tend to lean towards technical solutions’. Promoting behavior change at household level is an area ‘where most countries have few skills… and limited capacity. Most public agencies are unfamiliar with or ill-suited for this role.

**Lack of access to credit**

Access to credit is also noted as something which is commonly lacking in sub-Saharan African countries, particularly micro-credit for small service providers, whether community-based or private. Loans available are often only for income generating activities, rather than for improving community and household infrastructure (both sanitation and water facilities). And if such credit facility is available, it may not be at affordable interest rates or offer repayment periods long enough for poor borrowers.

**Lack of strong messages**

Promoting sanitation and hygiene presents a substantial communication challenge. As one Indian specialist explains: ‘Statistics make no impact on people, so that it is not enough to state to villagers that diarrhea kills tens of thousands of children in their country every year. The real challenge is to make clear the links between common illness and the practice of hygiene and sanitation behavior.

**Lack of arrangements for cleaning and maintenance**

A key aspect of the financial viability of shared and communal sanitation facilities is payment for maintenance – cleaning and pit-emptying. Sustained demand for use of latrines will depend on their being clean and without smell. If the rota or other system for cleaning breaks down, the facility will become unpleasant to use. The BPD report (Schaub-Jones et al 2006, page 7) suggests for communal facilities that ‘engaging a caretaker is strongly recommended, preferably a local person paid from usage receipts, rather than a public employee. To cover this expense, as well as [other] maintenance and emptying costs, a fee for use is charged.’

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1. **You have visited one of the schools in your locality. What part of its surroundings can you see that satisfy the criteria for disease prevention? List the parts of the building and its surroundings, and state why they are important.**

**1. School first aid**

There shall be provided in the premises of every school at least one first aid box.

At least 2 teachers in every school shall be trained in administering first aid.

First aid boxes must be fitted outside and adjacent to all science laboratories and

school workshops. All science teachers, teachers teaching in workshops and their

assistants must be familiar with the contents and their use.

First aid boxes shall be maintained fully equipped at all times. The recommended

first aid items in the First Aid Box should be listed.

The school administration may require the provision of a suitable room for medical inspection and first aid in the premises of any school which has more than 100 students. This is where hygiene and sanitation prevention messages should reach the students.

**2. School kitchen**

Schools should make their meal arrangements for pupils according to their

individual situations. Normally, schools should arrange a lunch break of about 1

hour per school day. Schools should set up co-ordination groups to work out the

healthy and environmentally friendly meal policy and practices for school, to

supervise, co-ordinate and improve meal arrangements for their pupils. The

group should be chaired by a senior member of the teaching staff and comprise

teachers’ and parents’ representatives. Alternatively, schools may set up one

committee overseeing tuck-shops, meal arrangements and other trading activities.

To make the meal arrangements in schools more effective, schools should refer to

the following guidelines to define food requirements and ways of waste reduction

as the core component in the contracts signed with lunch suppliers.

**3. Pit latrines/toilets**

This is where students will be taught with proper use and maintenance of their sanitation facilities in order to achieve sustainable sanitation.

1. **You have asked the local county government to provide a license for your new hotel in town. The inspector asks you to assist him to describe the basic hygiene for your business before licensing. Kindly describe.**

Food hygiene law states that all food handlers must have a high standard of personal cleanliness, wear protective clothing and follow food hygiene rules. Being a law, these things are not optional – you must comply with each of them. Below are the steps you should take to ensure your compliance with personal hygiene standards:

**1. Always Wash Your Hands**

The moments when you should wash your hands are pretty much endless! When you get to work, before handling food, after handling food, after blowing your nose, after going to the toilet, after touching your hair, before your lunch break, after your lunch break

The general rule is the more frequently the better, and definitely before handling food of any kind. Washing your hands also means more than a quick rinse under the tap: make sure you use hot water and a decent amount of soap and thoroughly rub all parts of your hands, fingers and nails. Paper towels are recommended for drying because they can be disposed of and so bacteria can’t be spread.

**2. Wear Protective Clothing**

If protective clothing – like gloves, a hat, a hairnet or an overall – is provided to you, then it must be clean and you must wear it. This is a legal requirement.

Protective clothing helps to protect the food from any bacteria you are carrying on your hands and your clothes, as well as from any loose hairs or bits of skin.

**3. Avoid Nail Polish, Perfume & Aftershave**

Whilst they might make you feel more attractive, glam or put-together, wearing nail varnish, perfume or aftershave to serve food is both impractical and not very safe. Nail polish (or fake nails) can easily chip off and flake into the food you are serving and strong fragrances can taint the food, especially if the food has a high fat content.

**4. Leave Accessories at Home**

Whether it’s a pair of pearl earrings, a locket necklace, a chain or a wrist watch, jewelry and other accessories like these are a bad idea in the food service industry. These items can easily harbor dirt and bacteria and may even cause physical contamination if bits of precious stone, metal or watch strap decide to make a leap into the food you are handling. The best idea is to leave your accessories at home or in your locker and then put them back on at the end of the working day

**5. Tie Long Hair Back**

Perhaps an obvious one, but make sure that your hair isn’t hanging around your face, dipping into food or falling out around the food premises! Even if you washed it this morning or have slicked it back, hair poses a constant food contamination hazard and so needs to be tied back and out of the way. If you’ve been provided with a head covering, like a hat or hair net, then make sure you wear it and never comb your hair in the food area.

**6. No Smoking**

Smoking indoors in a public place is against the law anyway so, if you are a smoker, ensure that you only do it in the designated area (far away from the food service and preparation areas). When you take a cigarette break, always take off your protective clothing first to avoid bringing any bacteria back inside on your return and always wash your hands before beginning to serve food again.

**7. Catch Your Sneezes**

When you sneeze, thousands and thousands of bacteria-ridden water droplets are released into the air around you. The same goes for coughing. If you don’t catch these droplets with a handkerchief or tissue then any food nearby is at great risk from contamination.

1. **You have to make a plan of action for the promotion of WASH in your town. Briefly describe the activities that need to be included in your plan.**

**Main task/activities to be undertaken:**

1. A comprehensive baseline (data collection from water points, households and schools)
2. Analysis of core sector indicators to describe WASH status at local level
3. Design of simple planning tools for prioritization and targeting support
4. Development of a WASH action / investment plan
5. Capacity building to improve implementation of the action / investment plan

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