

## MISSOURI BOARD OF CERTIFICATION STUDY GUIDE FOR EXAMINATION

### **Food: Define the following terms**

Critical Control Point (CCP)	HACCP
Food hazards-name 3	Imminent health hazard
General Use Pesticide	Game animal
Food Processing Plant	Highly susceptible population
Kitchenware	mg/L
pH	Plumbing system
Person in charge	Poisonous or toxic materials-4 categories
Potentially hazardous food	Poultry
Ready-to-eat food	Reduced oxygen packaging
Regulatory Authority	Sanitization
Restricted use pesticide	Service Animal
Sewage	Shellstock
Shucked shellfish	Single-use Articles
Slacking	Tableware
Temperature measuring device	Temporary Food establishment
USDA	Variance
Vending Machine	Warewashing
Whole-muscle, intact beef	CFR (Code of Federal Regulations)
Comminuted	Cross connection
TDZ	Cold Holding
Hot Holding	Time as a control point
Backflow prevention device	Service sink
Cooling	Thawing
Food Contact surface	Non-food contact surface
CIP equipment	Foodborne infection
Foodborne intoxication	Toxin-mediated Foodborne infection
Aerobic bacteria	Anaerobic bacteria
Water Activity	

### **The following are examples of questions that could appear on the exam:**

- Food packaged in a food establishment shall be labeled as specified in what code?
- Label information shall include what information?
- Fruits and vegetables that are cooked for hot holding shall be cooked to what temperature?
- Leftovers shall be heated to what temperature?
- What are the correct ways to thaw frozen food?
- How long do you have to cool cooked potentially hazardous food from 140<sup>0</sup> F. to 70<sup>0</sup> F?
- How long do you have to cool cooked potentially hazardous food from 70<sup>0</sup> F to 41<sup>0</sup> F?
- What are the approved cooling methods?
- What are the properties of potentially hazardous foods?
- What is the proper method of tasting foods?

When should deliveries be scheduled?  
If a can has a swollen head, what organism could be responsible?  
In Modified atmosphere packaging and vacuum packaging what organism is of most concern?  
What information does an MSDS form give you?  
Are hard boiled eggs considered potentially hazardous?  
What is the purpose of a shell stock tag?  
What are service animals and are they allowed in restaurants?  
What is a HACCP flow diagram?  
What can hand sinks be used for?  
Can freezers be used for cooling down hot foods?  
What is pasteurization?  
Where should in-use serving spoons be stored?  
At buffets what is one method of preventing customer contamination of foods?  
What responsibility does the person in charge have in regard to illnesses?  
What is the optimum store-room temperature and humidity?  
Why is a clear water rinse required between washing and sanitizing?  
Where is the optimal placement of thermometers in refrigeration units?  
Under what conditions are glass sensors on thermometers permissible?  
What organism grows well at refrigeration temperatures?  
What is the minimum hot water temperature allowable in food service facilities?  
How long can you keep ready-to-eat potentially hazardous foods that are held in a refrigerator at 41<sup>0</sup> F?  
How long can you keep ready-to-eat potentially hazardous foods that are held in a refrigerator at 45<sup>0</sup> F?  
When is a food handler required to wash their hands?  
Shell eggs shall be received clean and sound and may not exceed the restricted egg tolerances for U.S. Consumer Grade B as specified in what code?  
When may a food item be reserved?  
What is the final rinse temperature in a heat sanitizing dishwashing machine?  
The concentration of chlorine used in the final rinse of chemical dishwashing machine is what?  
The bulk milk container dispensing tube shall be cut how and how far from the chilled dispensing head?  
What does HACCP stand for?  
What foods are associated with Salmonellosis?  
What foods are associated with Botulism?  
What foods are associated with Campylobacter?  
What foods are associated with Listeria?  
What foods are associated with C. perfringens?  
What foods are associated with Shigellosis (bacillary dysentery)?  
What foods are associated with Staphylococcal food poisoning?  
What foods are associated with Vibrio vulnificus?  
What foods are associated with Yersiniosis?  
What foods are associated with B.cereus gastroenteritis?  
What foods are associated with E.coli 0157:H7?

What foods are associated with Hepatitis A?  
 Give several examples of parasitic illnesses.  
 What is the fecal/oral route?  
 What are parasites?  
 What is a host?  
 What are viruses?  
 What are spores?  
 Describe the 4 phases that bacteria go through.  
 What is "FATTOM"?  
 Foods that can cause an allergic reaction are called what?  
 What are nitrates used for?  
 What are sulfites used for?  
 What is MSG used for?  
 What types of foods are considered non-potentially hazardous?  
 What types of foods are considered potentially hazardous?  
 What are the five risk factors for foodborne illness?  
 What are microorganisms?  
 What is a pathogen?  
 Define a foodborne disease outbreak.  
 What is the cause of ciguatera?  
 What is the cause of histamine production in fish?  
 What types of organisms comprise "microorganisms"?  
 What is the single greatest threat to food safety?  
 What 6 factors are associated with bacterial growth?  
 What is the difference between foodborne infection, foodborne intoxication and a foodborne toxin-mediated infection?  
 What is the difference between a vegetative bacterial cell and a spore?  
 Does cooking to the proper temperature destroy all bacterial cells? Why or why not?  
 Approximately how many foodborne illnesses occur each year in the United States?  
 What foods are most likely to cause foodborne illness?  
 What are the ways that food becomes contaminated?  
 What segments of the population are most susceptible to foodborne illness?  
 Why is it difficult to determine when a Foodborne illness has occurred?  
 What are the required minimum cooking temperatures for the following foods? Roast beef; Turkey; Casseroles; Ground beef; Pork sausage; and fish.  
 When reheating food what is the minimum temperature the food must reach?  
 Give some examples of physical hazards.  
 Give an example of a natural chemical hazard.

**On-site sewage:**

Define the following:

Percolation	Aeration	Anaerobic
Coliform	BOD	COD
Soil horizons	Mottles	Karst topography

## Primary treatment

## Secondary Treatment

What role does soil play in on-site sewage treatment systems?

What does a soil morphology tell us?

What does color tell us about a soil?

What % of clay in soil generally makes it unsuitable for a soil absorption system?

There are two types of clays; expandable clays and non-expandable clays. Which one is a provisionally suitable soil?

What is soil structure, and what does it affect?

In what soils is structure not important?

What soil colors indicate good soil aeration?

What is a seasonal high water table?

If there is greater than 50% of rock fragments in a soil that overlays permeable bedrock, is that soil suitable for an absorption type system?

A grayish color soil indicates what?

What does a site plan tell us?

How are lagoons sized?

What is the property line setback distance for a lagoon?

If the lagoon is preceded by a properly sized septic tank, how much reduction in size is allowed?

What does seeding of lagoon berms with a hardy grass do?

If there is a neighboring home, how far does your lagoon have to be away from the home?

How far does a lagoon have to be from the residence it serves?

How do lagoons work?

How far from the property line does the effluent pipe have to be?

What is the minimum size allowable for a septic tank that serves a 4 bedroom residence?

If you have a 3 bedroom house and the soil loading rate is .4 gallons/sq. ft. how many square feet of soil absorption is required.

In a chamber system how much of a reduction is allowable by state law?

What is the purpose of a septic tank?

What is the purpose of a soil absorption system?

What is vertical separation (definition) and how much vertical separation is required between the trench bottom and a restrictive layer.

What are some of the restrictions that may require installation of an alternative system?

Why is it important to construct the absorption field when the ground is not saturated?

What is the maximum length that laterals may be?

What is a biomat and what function does it perform in an on-site system?

As a general rule, what is the % of slope that might make the site unsuitable?

What geographical areas of a site must be avoided?

What information does a site evaluation give us?

What is the minimum distance that a septic tank must be placed from a building foundation?

What gasses are found inside septic tanks, and what is the concern with them?

What must be submitted to the regulatory authority prior to issuance of a construction permit?

If you have a septic tank that is 5' long, 4' wide, and 10 feet deep, what is the liquid capacity of that tank?

How far must the tank be from any property line?

What does the soil texture tell us?

What is the maximum depth of laterals in a septic system?

In what part of an on-site soil absorption system does limited primary treatment occur?

What does "limited" primary treatment entail?

What are the advantages of dosing a system?

In what situation would aeration units not be an acceptable option?

What is the difference between a chamber system and a standard absorption system?

What is an LPP system?

How do drip irrigation systems work?

How does a submerged flow wetland work?

How does a sand filter system work?

### **Communicable Disease**

Definitions:

Endemic	Pandemic	Epidemic
Epizootic	Reservoir	Mycotoxins
Neurotoxins	Incidence rate	Attack rate
Incubation period	Direct Transmission	Vectors
Droplet Spread	Fomites	Descriptive Epidemiology
Epidemic curve	Point source	Intermittent source

What is the reservoir for West Nile Virus?

What is the best control measure for West Nile Virus?

What species carries West Nile Virus?

What are some of the more common environmentally related diseases?

What are some of the more common zoonotic diseases?

What animals are carriers of rabies virus?

What are the two types of rabies?

What type of laboratory samples are generally submitted for foodborne illness identification; virus identification; parasitic identification?

What is the incubation time for Hepatitis A, and for what time period will passive immunization be effective in preventing Hepatitis A?

Which diseases are required to be reported to Health Departments within 24 hours?

What are some of the diseases that may be of concern in bioterrorism?

What is the most common type of asbestos found?

What is a common bird disease?

What are some of the emerging diseases that we must be aware of which may have reservoirs in animals?

### **Vector Control**

Definitions: Integrated Pest Management

- What are the traits and stages of fly development?
- What is the most common type of fly?
- How does garbage affect flies?
- What diseases are associated with mosquitoes?
- What are some of the biological and chemical controls used to kill mosquitoes?
- What common diseases are associated with ticks?
- What are the stages of mosquito development?
- What are the signs of a cockroach infestation?
- What are some of the traits of rodents?
- How can we deter rodents from entering buildings?
- What general methods are effective in rodent trapping or poisoning?
- What agency regulates pesticides?
- What are the most desirable ways to control vectors of diseases?
- What are transmissible spongiform encephalopathies?
- What are the two poisonous spiders that we find in Missouri?

## **Daycare**

Definitions:

High hazard cross connection

Low hazard cross connection

- How many children can you care for without having a license from BCSL?
- What pets must be excluded from daycare facilities?
- What are the requirements for dishwashing facilities at each of the categories of child care facilities?
- What are acceptable ways to sanitize eating utensils and toys?
- What is one of the practices in a daycare that is critical?
- Where may toxic items be stored in a day care?
- Where may medications be stored in a day care?
- Why are parrots discouraged from being present in a daycare facility?
- Why are snakes not allowed in daycare facilities?
- Why is ventilation important in a daycare facility?
- What is the range of water temperatures allowable in a daycare facility?
- What are some of the environmental hazards that are associated with daycare facilities?
- What are the requirements for swimming pools used in a daycare setting?
- Is mechanical ventilation required in all daycare facilities?
- What are some sources of lead that may be found in daycare facilities?
- What is the leading cause of death in children?

## **Swimming Pools**

What is the function of disinfectants in a swimming pool?  
 What types of disinfectants are found in swimming pools, and which one is the most common?  
 What is the purpose of alkalinity in a swimming pool?  
 Why is control of pH in a pool important?  
 What are the ideal levels of chlorine, pH, and alkalinity in swimming pools?  
 What is breakpoint chlorination?  
 What type of damage can chemicals cause in swimming pools?  
 What types of diseases can be transmitted from swimming pools?  
 What is the purpose of sodium thiosulfate in testing pool water?  
 What does brown colored water indicate?  
 What do black or green spots on pool walls or floors indicate?  
 What can cause pool water to turn green?  
 What causes “eye-burn” in pool water?  
 What swimming pool contaminant poses the greatest threat to swimmers?  
 What is the purpose of cyanuric acid in pool water?  
 What does the Langelier Saturation Index tell us?  
 What is the method for determining chloramines levels in swimming pools?  
 What are the benefits of use of ozone in swimming pools?

## **Water**

Definitions:

Ppm	mg/l	Fecal Coliform
Indicator bacteria	Hard water	Soft Water
Hypochlorites	Annular space	Organic chemicals
Inorganic chemicals		

There are several types of wells found in Missouri. What are the differences between them?  
 What are some of the common chemical contaminants of well water?  
 In Missouri, what is the regulatory agency for public water supplies?  
 When should a private water supply be sampled for bacteriological safety?  
 What are some of the diseases that can be transmitted to people from water?  
 Staining and corrosion are problems that occur in private water supplies. How can we reduce these problems?  
 What is Ultra Violet disinfection?  
 What does it mean when a water sample comes back noted “unsafe”?  
 What types of chemicals are used to disinfect wells?  
 How do nitrates affect a water supply?  
 How do you properly sample a well?

## **Salvage**

Definitions:

Embargo

Denaturization

In the situation of a truck wreck on a major highway, what is the first think that you should do?

Who is legally responsible for the contents of the truck?

What is the purpose of salvage?

What are the various types of packaging for food products?

What equipment should you have with you when you work at a site that requires salvage?

If a product is under embargo, how long must it be held by the owner?

If an insurance adjuster refuses to allow you to destroy products under embargo to whom do you go to enforce your decision?

What are some of the methods of destruction of products that are unfit to eat?

At what temperature are perishables deemed to be unsafe?

## **Lodging**

Definitions:

Ground Fault Interrupter

Air gap

Fire door

What are dead end corridors?

How many exits must be available from any room in a new motel?

What is the law regarding smoke and carbon monoxide detectors in motels?

What is the law regarding fire extinguishers in motels?

What is the law regarding sanitizing ice buckets and individual coffee pots?

How often should mattresses be replaced?

In "extended stay" facilities are the requirements regarding changing of linen the same as a motel?

Can extension cords be used in a motel, and if so, under what conditions?

## **Lead**

Lead is a carcinogen and especially hazardous to children under 6 years old. What are the most prominent health effects of lead exposure, where is it found naturally and in homes, and at what level does lead begin to effect children.

## **Emergency Response**

What are public health's responsibilities in any emergency?

What are the duties of a first responder?

What are some of the biological agents terrorists may use?

What are some of the chemicals that terrorists could use?

What does risk assessment entail?

What are the Category A biological agents?

What are the 4 phases of emergency response?

What is the goal of environmental health in an emergency?