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# PAPER clinical Bacteriology

**Answer No 3**

H. pylori is unusual in its ability to colonize the stomach, where low pH normally protects against bacterial infection.

Transmission is thought to be from person to person by saliva. Spread by fecal contamination of food and water.

H. pylori colonizes gastric mucosal cells in the stomach, surviving in the mucous layer that coats the epithelium.

H. pylori secretes urease, producing ammonium ions that neutralize stomach acid in the organism, thus favoring bacterial multiplication.

Ammonia can damage the gastric mucosa.

**Answer No 2**

**Symbiotic Relationships**

Symbiosis is a close relationship between two species in which at least one species benefits. For the other species, the relationship may be positive, negative, or neutral. There are three basic types of symbiosis: mutualism, commensalism, and parasitism.

**Mutualism**

Mutualism is a symbiotic relationship in which both species benefit. An example of mutualism involves goby fish and shrimp. The nearly blind shrimp and the fish spend most of their time together. The shrimp maintains a burrow in the sand in which both the fish and shrimp live. When a predator comes near, the fish touches the shrimp with its tail as a warning. Then, both fish and shrimp retreat to the burrow until the predator is gone. From their relationship, the shrimp gets a warning of approaching danger. The fish gets a safe retreat and a place to lay its eggs.

Commensalism

**Commensalism** is a symbiotic relationship in which one species benefits while the other species is not affected. One species typically uses the other for a purpose other than food. For example, mites attach themselves to larger flying insects to get a “free ride.” Hermit crabs use the shells of dead snails for homes.

Parasitism

**Parasitism** is a symbiotic relationship in which one species (the **parasite**) benefits while the other species (the **host**) is harmed. Many species of animals are parasites, at least during some stage of their life. Most species are also hosts to one or more parasites.

Some parasites live on the surface of their host. Others live inside their host. They may enter the host through a break in the skin or in food or water. For example, roundworms are parasites of mammals, including humans, cats, and dogs The worms produce huge numbers of eggs, which are passed in the host’s feces to the environment. Other individuals may be infected by swallowing the eggs in contaminated food or water.

**Answer No 4**

**Localized infections:**

Localized P. aeruginosa infections may occur in the eye, ear, skin, urinary tract, respiratory tract, gastrointestinal tract (GI).

In most cases, localized infections have the potential to lead to disseminated infection.

**Systemic infection**

The GI tract is a particularly common site for penetration.

The resulting systemic infections may include bacteremia, pneumonia, bone and joint infections, endocarditis, and infections of the skin/soft tissue and CNS.

**Answer No 5**

*Escherichia coli*

*Salmonella*

*Shigella*

*Yersinia pestis*

*Enterobacter*

*Klebsiella*

*Serratia*

**Answer No 1**

**Normal flora** is the microorganisms that live on another living organism (human or animal) or inanimate object without causing disease. The human body is not sterile; we become colonised by bacteria from the moment we are born. We are covered with, and contain within our intestines, approximately one hundred trillion bacteria that form the normal flora of our bodies. This normal flora helps to prevent us becoming colonised with more dangerous bacteria, which might lead to infection.

Many circumstances can change normal flora, e.g. normal flora of the human body begins to change after admission to a hospital or long-term care facility. The process usually begins around day 4 of admission; this is why after 4 days of admission the antibiotics for hospital acquired infections change. It is not because the severity of the illness is different.