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**COLLEGE: MEDICINE AND HEALTH SCIENCES**

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**COURSE TITLE: PHYSIOLOGY**

**COURSE CODE: PHS 212**

**ASSIGNMENT TITLE: RENAL PHYSIOLOGY**

**QUESTION:**

Write a short note on urinalysis.

**ANSWER:**

**WHAT IS URINALYSIS?**

Urinalysis is the process of analyzing for target parameters of health and disease. It is also known as routine and microscopy (R&M). It is array of fests performed with urine and one of the most common methods of medical diagnosis. Urinalysis means the analysis of urine and it is used to diagnose several diseases.

The target parameters that are measured in urinalysis include many substances and cells, as well as other properties, such as specific gravity. A part of a urinalysis can be performed by using test strips, in which the test results can be read as the strip’s color changes. Another method is light microscopy of urine samples.

**TEST STRIP URINALYSIS**

Test strip urinalysis exposes urine to strips that react if the urine contains certain cells or molecules. Test strip urinalysis is the most common technique used in routine urinalysis. A urine test strip can identify:

* Leukocytes- their presence in urine is known as leukocyturia.
* Nitrites- their presence in urine is known as nitrituria.
* Proteins- their presence in urine is known as proteinuria, albuminuria or micro albuminuria.
* Blood- its presence in urine is called hematuria.
* pH- the acidity of urine is easily quantified by test strips, which can identify cases of metabolic acidosis or alkalosis.

**URINE MICROSCOPY**

The number of cells and/ or material, such as urinary casts, can yield a great detail of information and may suggest a specific diagnosis.

A urinary cast is any tiny structure found in urine that consists of multiple molecules or cells bound together. Microscopy can identify casts in urine and use them to diagnose diseases, by characterizing symptoms such as:

* Red blood cells casts are associated with glomerulonephritis, vasculitis, or malignant hypertension.
* White blood cell casts are associated with acute interstitial nephritis, exudative glomerulonephritis, or severe pyelonephritis.
* Epithelial cell casts are associated with toxin-induced, acute tubular necrosis, hepatitis, and cytomegalovirus.
* (Heme) granular casts are associated with acute tubular necrosis, and are often composed of proteins, especially antibodies.
* Bacterial casts are associated with urinary tract infection; the cast may be cultured in order to identify the causative organism of the cast.