

CSIR NET UNIT 7 SYLLABUS

SYSTEM PHYSIOLOGY - ANIMAL

CSIR NET UNIT 7 covers blood and circulation, cardiovascular system, respiratory system, nervous system, sense organs, excretory system, thermoregulation, stress and adaptation, digestive system, and endocrinology and reproduction. Topics include blood composition, cardiac anatomy, neural control of respiration, sensory responses, kidney function, thermoregulation, and endocrine regulation.

CSIR NET UNIT 7	Topics
A) Blood and Circulation	<ul style="list-style-type: none">- Blood corpuscles, haemopoiesis, and formed elements- Plasma function, blood volume, blood volume regulation- Blood groups, haemoglobin, immunity, haemostasis
B) Cardiovascular System	<ul style="list-style-type: none">- Comparative anatomy of heart structure- Myogenic heart, specialized tissue- ECG – its principle and significance- Cardiac cycle, heart as a pump- Blood pressure, neural and chemical regulation
C) Respiratory System	<ul style="list-style-type: none">- Comparison of respiration in different species- Anatomical considerations- Transport of gases, exchange of gases- Waste elimination, neural and chemical regulation of respiration
D) Nervous System	<ul style="list-style-type: none">- Neurons, action potential- Gross neuroanatomy of the brain and spinal cord- Central and peripheral nervous system- Neural control of muscle tone and posture
E) Sense Organs	<ul style="list-style-type: none">- Vision, hearing, and tactile response
F) Excretory System	<ul style="list-style-type: none">- Comparative physiology of excretion- Kidney, urine formation- Urine concentration, waste elimination, micturition- Regulation of water balance, blood volume, blood pressure- Electrolyte balance, acid-base balance

- G) Thermoregulation
- Comfort zone, body temperature – physical, chemical, neural regulation
 - Acclimatization
- H) Stress and Adaptation
- I) Digestive System
- Digestion, absorption
 - Energy balance, BMR
- J) Endocrinology and Reproduction
- Endocrine glands
 - Basic mechanism of hormone action
 - Hormones and diseases
 - Reproductive processes, gametogenesis, ovulation
 - Neuroendocrine regulation

Study tips for CSIR NET UNIT 7: Use diagrams to understand physiological processes, focus on key regulatory mechanisms, create mnemonic devices for hormone functions, and practice with case studies to apply concepts in diverse contexts. Regularly review and reinforce your understanding through self-assessment quizzes.