

**KARNATAKA VETERINARY, ANIMAL AND FISHERIES SCIENCES  
UNIVERSITY, BIDAR**  
**Post Graduate Entrance Examinations : 2021-22**  
**PhD in Veterinary Physiology**  
**Subject Code: P02**

**HALL TICKET NO.:** .....

**Date:** 10<sup>th</sup> May 2022

**Max Marks : 100**

**Duration : 2 Hrs.**

**Choose the correct answer from the four options given under each question and fill the relevant circle with black ball point pen in the OMR Sheet.**

**Note: 1) Do not use pencil for marking on the OMR Sheet.**

**2) Marking on the OMR sheet for more than one option for a question will be rendered invalid.**

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1. The maximum volume of air that can be exhaled after making a maximum inspiratory effort is \_\_\_\_\_.
  - a) residual volume
  - b) vital capacity
  - c) tidal volume
  - d) functional residual capacity
2. The gallbladder \_\_\_\_\_.
  - a) produces cholecystokinin
  - b) produces bile
  - c) stores and concentrates bile
  - d) none of the above
3. The \_\_\_\_\_ sphincters is under voluntary control.
  - a) hepatopancreatic
  - b) pyloric
  - c) internal anal
  - d) external anal
4. Non digested carbohydrate are called \_\_\_\_\_.
  - a) proteins
  - b) vitamins
  - c) fiber
  - d) all of them
5. Denaturation of proteins in chicken occurs in the \_\_\_\_\_.
  - a) oesophagus
  - b) proventriculus and gizzard
  - c) crop and pancreas
  - d) small and large intestine

- 6 The drive causing an animal to eat is called \_\_\_\_\_.  
a) hunger  
b) achlorhydria  
c) satiety  
d) thirst
- 7 Daily production of saliva in cows is around \_\_\_\_\_ litres.  
a) 100 – 200  
b) 1 – 10  
c) 45 – 80  
d) 250 – 270
- 8 The right atrioventricular opening is guarded by which the \_\_\_\_\_ valve.  
a) bicuspid  
b) tricuspid  
c) aortic semilunar  
d) pulmonary semilunar
- 9 Optimum pH for pepsin action is \_\_\_\_\_.  
a) 5.1 – 6.8  
b) 1.5 – 3.0  
c) 8.5 – 9.0  
d) 7.2 – 7.8
- 10 Salivary amylase digests starch upto the \_\_\_\_\_ stage.  
a) fructose  
b) lactose  
c) glucose  
d) maltose
- 11 The systemic circulation begins in which chamber of heart \_\_\_\_\_.  
a) right atrium  
b) left atrium  
c) right ventricle  
d) left ventricle
- 12 Mulberry heart disease is caused by \_\_\_\_\_.  
a) selenium deficiency  
b) zinc deficiency  
c) vitamin C deficiency  
d) vitamin A deficiency
- 13 Blood from the cardiac muscle itself drains into the \_\_\_\_\_.  
a) right ventricle  
b) left ventricle  
c) coronary sinus  
d) superior vena cava

- 14 The \_\_\_\_\_ is the smallest compartment of the ruminant stomach.
- rumen
  - reticulum
  - omasum
  - abomasum
- 15 The \_\_\_\_\_ is known as the reserve pace maker.
- S.A. node
  - A.V. node
  - Bundle of His
  - Purkinje fibers
- 16 The most serious and life threatening arrhythmia of the heart is \_\_\_\_\_.
- bradycardia
  - tachycardia
  - fibrillation
  - flutter
- 17 When aortic pressure is greater than the ventricular pressure the \_\_\_\_\_.
- tricuspid atrioventricular valve opens
  - bicuspid atrioventricular valve closes
  - aortic semilunar valve closes
  - pulmonary semilunar valve opens
- 18 The heart receives its own oxygenated blood supply via the \_\_\_\_\_.
- coronary arteries
  - pulmonary veins
  - coronary sinus
  - foramen ovale
- 19 The pulmonary semilunar valve prevents back flow of blood into the \_\_\_\_\_.
- right atrium
  - left atrium
  - right ventricle
  - left ventricle
- 20 \_\_\_\_\_ is not produced by an enteroendocrine cell.
- pepsin
  - gastrin
  - secretin
  - cholecystokinin
- 21 Pica is classically associated with the deficiency of \_\_\_\_\_.
- calcium
  - cobalt
  - phosphorus
  - sodium
- 22 Complete absence of respiration is called as \_\_\_\_\_.
- polypnea
  - hypoxia
  - apnea
  - dyspnoea

- 23 The first heart sound results when the \_\_\_\_\_.  
a) ventricle contracts  
b) semilunar valves close  
c) AV valves close  
d) atria contract
- 24 Carbon dioxide is mainly carried as \_\_\_\_\_ when blood enters pulmonary capillaries.  
a) deoxyhemoglobin  
b) oxyhemoglobin  
c) bicarbonate ions  
d) carbaminohemoglobin
- 25 The respiratory center is located in the \_\_\_\_\_.  
a) alveoli  
b) diaphragmatic center  
c) individual muscles  
d) medulla oblongata
- 26 The T wave of an electrocardiogram represents \_\_\_\_\_.  
a) ventricular depolarization  
b) atrial repolarization  
c) ventricular repolarization  
d) atrial depolarization
- 27 The pneumotaxic center is located in the \_\_\_\_\_.  
a) upper pons  
b) cerebellum  
c) cerebral cortex  
d) medulla
- 28 At each beat, certain amount of blood is pumped out by each ventricle into the circulation is called as \_\_\_\_\_.  
a) cardiac output  
b) stroke volume  
c) minute volume  
d) none of these
- 29 The amount of air that remains in the lung after forceful expiration is called as the \_\_\_\_\_.  
a) tidal volume  
b) inspiratory reserve volume  
c) expiratory reserve volume  
d) residual volume
- 30 All motor neurons are \_\_\_\_\_.  
a) bipolar  
b) interneurons  
c) multipolar  
d) unipolar

- 31 In the peripheral nervous system, the \_\_\_\_\_ form the myelin sheath.
- a) astrocytes
  - b) ependymal cells
  - c) oligodendrocytes
  - d) schwann cells
- 32 All preganglionic autonomic neurons secrete \_\_\_\_\_.
- a) acetylcholine
  - b) dopamine
  - c) epinephrine
  - d) nicotine
- 33 "Night blindness" is an early sign of \_\_\_\_\_.
- a) glaucoma
  - b) vitamin A deficiency
  - c) myopia
  - d) presbyopia
- 34 The \_\_\_\_\_ controls the smooth and cardiac muscles as well as the glandular activity.
- a) autonomic nervous system
  - b) sensory nervous system
  - c) skeletal division
  - d) somatic nervous system
- 35 All preganglionic autonomic neurons secrete \_\_\_\_\_.
- a) acetylcholine
  - b) dopamine
  - c) epinephrine
  - d) nicotine
- 36 Cone cells are photoreceptors that respond to \_\_\_\_\_.
- a) low light levels
  - b) coloured light
  - c) light reflected from distant objects
  - d) light with wavelengths greater than 2500 nm
- 37 Gaps in the myelin sheath are called \_\_\_\_\_.
- a) axonal interstices
  - b) myelinoids
  - c) nodes of Ranvier
  - d) synapse
- 38 During muscle contraction \_\_\_\_\_.
- a) length of A band remains same
  - b) length of I band remains increases
  - c) length of H zone either increases
  - d) Z lines moves away
- 39 The ability to sense body position is related to \_\_\_\_\_ receptors.
- a) pain
  - b) general
  - c) proprioceptors
  - d) pressure

- 40 Meissner corpuscles respond to a stimulus of \_\_\_\_\_.  
a) cold objects  
b) heat  
c) light touch  
d) pain
- 41 The eye contains \_\_\_\_\_.  
a) mechanoreceptors  
b) photoreceptors  
c) chemoreceptors  
d) proprioceptors
- 42 During inspiration in a bird, the pressure within the air sacs \_\_\_\_\_.  
a) decreases relative to ambient atmospheric pressure  
b) increases relative to ambient atmospheric pressure  
c) does not change relative to ambient atmospheric pressure  
d) none of the above
- 43 Muscles that are not used may degenerate or undergo a process of \_\_\_\_\_.  
a) atrophy  
b) fatigue  
c) hypertrophy  
d) tetany
- 44 The junction between a nerve and a muscle is called \_\_\_\_\_.  
a) neurotransmitter  
b) neuromuscular junction  
c) sarcomere  
d) synapse
- 45 The normal haemoglobin concentration in canine is \_\_\_\_\_.  
a) 12 – 18 gm%  
b) 02 – 08 gm%  
c) 22 – 28 gm%  
d) 32 – 38 gm%
- 46 During the \_\_\_\_\_ the sarcolemma is unresponsive to a second stimulus.  
a) latent period  
b) refractory period  
c) period of contraction  
d) tetanus
- 47 An increased neutrophil count typically is associated with \_\_\_\_\_.  
a) an ongoing bacterial infection  
b) allergic reactions  
c) an ongoing parasitic infection  
d) neutropenia
- 48 The most common neurotransmitter in the body is \_\_\_\_\_.  
a) adrenalin  
b) dopamine  
c) acetylcholine  
d) norepinephrine

- 49 The \_\_\_\_\_ are most numerous white blood cells present in the bovine blood sample.
- a) neutrophils
  - b) lymphocytes
  - c) monocytes
  - d) eosinophils
- 50 As the haematocrit increases, plasma erythropoietin levels will \_\_\_\_\_.
- a) increase
  - b) decrease
  - c) remain unchanged
  - d) none of the above
- 51 Plasma component responsible for maintaining the osmotic pressure of blood is \_\_\_\_\_.
- a) gamma globulin
  - b) albumin
  - c) plasmin
  - d) fibrinogen
- 52 The type of white blood cell that is often the first to arrive at the site of infection is the \_\_\_\_\_.
- a) basophil
  - b) eosinophil
  - c) neutrophil
  - d) monocyte
- 53 The enzyme responsible for converting fibrinogen to fibrin is \_\_\_\_\_.
- a) thrombin
  - b) renin
  - c) secretin
  - d) serotonin
- 54 If a blood sample is taken for DNA testing, \_\_\_\_\_ would be examined.
- a) erythrocytes
  - b) leucocytes
  - c) plasma proteins
  - d) thrombocytes
- 55 The cartilage of bones is stimulated by \_\_\_\_\_.
- a) GH
  - b) somatomedin
  - c) insulin
  - d) somatostatin
- 56 The hormone \_\_\_\_\_ decreases the production of urine.
- a) adrenalin
  - b) ADH
  - c) oxytocin
  - d) thyroxine

- 57 The hormone \_\_\_\_\_ plays the greatest role in the contractions that occur in the uterus during labour.
- a) ADH
  - b) prostaglandin
  - c) oestrogen
  - d) oxytocin
- 58 The hormone \_\_\_\_\_ has the most potent effect on increasing metabolic rate.
- a) triiodothyronine
  - b) thyroxine
  - c) thyroglobulin
  - d) alpha globulin
- 59 The hormone \_\_\_\_\_ directly antagonizes the effect of calcitonin.
- a) thyroxine
  - b) insulin
  - c) parathormone
  - d) glucocorticoid
- 60 The \_\_\_\_\_ gland is important for producing immunity.
- a) thyroid
  - b) thymus
  - c) pancreas
  - d) pituitary
- 61 The \_\_\_\_\_ produces a hormone, which stimulates the production of blood cells.
- a) pancreas
  - b) liver
  - c) heart
  - d) kidney
- 62 \_\_\_\_\_ is the last step in the sequence of hormone synthesis in the adrenal medulla.
- a) tyrosine
  - b) epinephrine
  - c) dopamine
  - d) norepinephrine
- 63 The hormone \_\_\_\_\_ does not act by a second messenger system.
- a) testosterone
  - b) epinephrine
  - c) glucagon
  - d) growth hormone
- 64 The anterior pituitary hormone \_\_\_\_\_ secretion increases in response to stress.
- a) thyroid-stimulating hormone
  - b) adrenocorticotrophic hormone
  - c) luteinizing hormone
  - d) prolactin



- 65 The endocrine gland responsible for the body's circadian rhythm is the \_\_\_\_\_ gland.
- a) thymus
  - b) pineal
  - c) parathyroid
  - d) pituitary
- 66 The hormone \_\_\_\_\_ acts on the intestines and causes increased calcium absorption.
- a) calcitonin
  - b) calcitriol
  - c) thyroxine
  - d) pancreatic polypeptide
- 67 The general adaptation syndrome (GAS) is activated by the \_\_\_\_\_.
- a) hypothalamus
  - b) adrenal gland
  - c) pituitary gland
  - d) thyroid gland
- 68 Hyposecretion of cortisol can cause \_\_\_\_\_.
- a) cretinism
  - b) Grave's disease
  - c) diabetes insipidus
  - d) Addison's disease
- 69 The hormones synthesized by the gonads are called as \_\_\_\_\_ hormones.
- a) gonadal
  - b) gonadotropic
  - c) ovarian
  - d) testicular
- 70 A plasma glucose concentration of 300 mg/dl and a urine analysis that is positive for glucose has been found in the dog. Which one of the following would be likely clinical sign?
- a) haematuria
  - b) polyuria and polydipsia
  - c) stranguria
  - d) none of these
- 71 The fern pattern of oestrus mucus is due to \_\_\_\_\_.
- a) high chloride content
  - b) low chloride content
  - c) high phosphorus content
  - d) low phosphorus content
- 72 Pre-ovulatory \_\_\_\_\_ surge is necessary for ovulation.
- a) LH
  - b) FSH
  - c) progesterone
  - d) oestrogen

- 73 Oestrogen affects the mammary growth by causing \_\_\_\_\_.  
a) ductal growth  
b) isometric growth  
c) lobulo-alveolar growth  
d) all of the above
- 74 \_\_\_\_\_ are short day breeders.  
a) cats  
b) mares  
c) sows  
d) sheep
- 75 Silent oestrus generally seen in \_\_\_\_\_.  
a) queens  
b) bitch  
c) buffaloes  
d) ewe
- 76 In mares \_\_\_\_\_ type of placentation occurs.  
a) discoid  
b) diffuse  
c) cotyledonary  
d) zonary
- 77 The hormone PMSG is secreted by the \_\_\_\_\_ in mares.  
a) endometrial cups  
b) placentomes  
c) foetus  
d) ovaries
- 78 Luteal cysts produce the hormone \_\_\_\_\_.  
a) progesterone  
b) oestrogen  
c) relaxin  
d) oxytocin
- 79 The enzyme \_\_\_\_\_ secreted by acrosome helps in penetration of spermatozoa into the ovum.  
a) protease  
b) peptidase  
c) lipase  
d) hyaluronidase
- 80 Reduced concentration of spermatozoa is known as \_\_\_\_\_.  
a) asthenozoospermia  
b) teratozoospermia  
c) azoospermia  
d) oligozoospermia
- 81 Pseudopregnancy is most commonly observed in \_\_\_\_\_.  
a) bitch  
b) doe  
c) mare  
d) queen

- 82 An area of white scar tissue on the ovary of a cycling female would most likely represent a regressed corpus luteum called the \_\_\_\_\_.  
a) atretic follicle  
b) corpus albican  
c) corpus haemorrhagicum  
d) graafian follicle
- 83 Panting is major heat loss mechanism in \_\_\_\_\_.  
a) dog  
b) cow  
c) horse  
d) ewe
- 84 The non-shivering thermogenesis is predominantly due to calorogenic effect of \_\_\_\_\_.  
a) thyroxine  
b) epinephrine  
c) norepinephrine  
d) both (b) & (c)
- 85 \_\_\_\_\_ is an example of insensible water loss.  
a) vomition  
b) sweating  
c) defecation  
d) urination
- 86 Growth occurs when \_\_\_\_\_.  
a) anabolism and catabolism are equal  
b) catabolism exceeds anabolism  
c) anabolism exceeds catabolism  
d) negative nitrogen balance
- 87 The initiation of milk secretion is called \_\_\_\_\_.  
a) lactogenesis  
b) galactopoiesis  
c) mammogenesis  
d) none of the above
- 88 Muscle cells that surround the alveoli and squeeze milk into the cistern are called as \_\_\_\_\_.  
a) sertoli cells  
b) thecal cells  
c) alpha cells  
d) myoepithelial cells
- 89 In birds, albumin portion of the egg is secreted by the \_\_\_\_\_.  
a) infundibulum  
b) magnum  
c) isthmus  
d) uterus

- 90 Small stones and gravel eaten by birds' aids grinding in \_\_\_\_\_.  
a) crop  
b) proventriculus  
c) gizzard  
d) caeca
- 91 The principal nitrogenous component of avian urine is \_\_\_\_\_.  
a) ammonia  
b) urea  
c) uric acid  
d) none of the above
- 92 What does the term systolic pressure refer to?  
a) the value, in mmHg, that appears in the denominator of a blood pressure measurement  
b) the peak pressure in the blood due to the contraction of the left ventricle  
c) the minimum pressure in the aorta prior to left ventricular contraction  
d) the difference between maximum and minimum arterial blood pressures
- 93 The \_\_\_\_\_ portion of the nephron accounts for the largest amount of water, glucose, amino acid and vitamin reabsorption  
a) loop of Henle  
b) distal tubule  
c) proximal tubule  
d) collecting duct
- 94 The act of voiding urine from the urinary bladder is called as \_\_\_\_\_.  
a) defecation  
b) excretion  
c) filtration  
d) micturition
- 95 What characteristic of a smooth muscle cell distinguishes it from cardiac and from skeletal muscle?  
a) being branched  
b) being under involuntary control  
c) lack of striations  
d) being uninucleate
- 96 Goose bumps in the skin are caused by contraction of the \_\_\_\_\_ in response to cold or emotions.  
a) arrector pili muscles  
b) dermal papillae  
c) sebaceous glands  
d) skeletal muscles below
- 97 What are the receptors that are sensitive to blood pressure called?  
a) pacinian corpuscles  
b) nociceptors  
c) baroreceptors  
d) chemoreceptors

- 98 \_\_\_\_\_, a glycoprotein that binds to sex hormones, specifically testosterone & oestradiol.
- a) TBPA
  - b) SHBG
  - c) CBG
  - d) TBG
- 99 \_\_\_\_\_ stimulates secretion of water & bicarbonates from the pancreas & bile ducts.
- a) cholecystokinin
  - b) secretin
  - c) gastrin
  - d) gastric inhibitory polypeptide
- 100 \_\_\_\_\_ is a periodic phenomenon, involving a round trip that may be of seasonal occurrence or may require a lifetime to complete.
- a) hibernation
  - b) aestivation
  - c) migration
  - d) summer torpor

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