

## Bihar Public Service Commission

Drug Inspector Written (Objective) Competitive Examination (Advt.No. 09/2022)

**(Examination Date : 09.07.2023)**

### **PROVISIONAL ANSWER KEY :Anatomy, Physiology and Health Education**

#### **(Paper-3, Unit I)**

आयोग द्वारा उपलब्ध कराये गये उत्तर पूर्णतः औपबधिक (Provisional) हैं। उपर्युक्त निर्धारित तिथि तक आपत्तिकर्ताओं से प्राप्त आपत्ति की गहन समीक्षा विषय विशेषज्ञों की समिति द्वारा की जायेगी और गहन समीक्षोपरान्त सभी प्रश्नों का अन्तिम आदर्श उत्तर तैयार किया जायेगा। विषय विशेषज्ञों की समिति द्वारा तैयार किये गये उक्त अन्तिम आदर्श उत्तर का आयोग द्वारा अनुमोदनोपरान्त उसके आधार पर ओ.एम.आर. उत्तर पत्रक (OMR Answer Sheet) का मूल्यांकन किया जायेगा।

Series-A		Series-B		Series-C		Series-D		Remarks
Question No.	Answer	Question No.	Answer	Question No.	Answer	Question No.	Answer	
1	D	11	A	31	B	43	C	The human skeleton of an adult consists of around 206 bones, 80 bones in the axial skeleton and 126 bones in the appendicular skeleton
2	A	12	B	32	C	44	D	Cranium refers to the part of the skull surrounding the brain. Humans have eight cranial bones which fuse together to protect the brain by forming a hard barrier around the soft tissue
3	B	13	C	33	D	45	A	Hyaline cartilage is the most widespread and its the type that makes up the embryonic skeleton. It persists in human adults at the ends of the bones in free-moving joints as articular cartilage at the end of the ribs, and in the nose
4	D	14	A	34	B	46	C	The four chambers of the heart are joined by four valves: the tricuspid, pulmonic, mitral, and aortic valves. These valves allow unidirectional blood flow while preventing blood backflow
5	C	15	D	35	A	47	B	The tip of the tongue is the region most sensitive to sweet, salt, and umami tastes. The sides are most sensitive to sour, and the back of the tongue to bitter tastes.
6	A	16	B	36	C	48	D	Gastrin hormone is secreted in stomach. Due to peristalsis in stomach food particles are rubbed on mucosal layer of stomach, rubbing process G-cells or gastrin cells are stimulated and secrete gastrin hormone
7	D	17	A	37	B	49	C	The pancreatic $\beta$ -cell plays a key role in glucose homeostasis by secreting insulin, the only hormone capable of lowering the blood glucose concentration
8	C	18	D	38	A	50	B	Liver is the largest gland in the human body that secretes bile and can weigh

Series-A		Series-B		Series-C		Series-D		Remarks
Question No.	Answer	Question No.	Answer	Question No.	Answer	Question No.	Answer	
								up to 1.5 kg for a human adult
9	A	19	B	39	C	1	A	The part which projects above the gums is the crown which is covered by enamel, the hardest substance of the human body
10	D	20	A	40	B	2	C	Saliva has a pH normal range of 6.2-7.6 with 6.7 being the average pH. Which neutralize the acidic environment created by bacteria, foods and drinks in the mouth
11	B	21	C	41	A	3	B	Peristalsis is the involuntary movement of the longitudinal and circular muscles, primarily in the digestive tract. It occurs as progressive wave-like contractions to push food forward into the stomach
12	B	22	C	42	D	4	A	The function of the esophagus is to move the bolus into the stomach. It does not take part in digestion and hence they do not produce any digestive enzymes
13	C	23	D	43	A	5	B	Aqueous humour is a watery, alkaline liquid filling the anterior compartment of the eye. It is present between the cornea and the lens. It maintains the shape of the cornea and supplies nutrition to both lens and cornea
14	B	24	C	44	A	6	B	Aerobic respiration is the process of producing cellular energy involving oxygen. The first step is glycolysis. Glucose and oxygen react to produce carbon dioxide and water
15	C	25	A	45	B	7	C	The process of breathing involves the transport of carbon dioxide in the opposite direction as well as the exchange of oxygen from the external environment into the cells
16	A	26	B	46	C	8	D	A type of respiration occurring in the presence of oxygen is called aerobic respiration. It takes place in the mitochondria of the cell and produces energy, hence called power house of the cell
17	A	27	B	47	C	9	D	A Belgian cytologist named <b>Christian de Duve</b> discovered lysosomes in the 1950s.
18	A	28	B	48	C	10	D	The bronchi branch into smaller bronchi and even smaller tubes called bronchioles. Bronchioles end in tiny air sacs called Alveoli allows exchange of gases inside the lungs
19	A	29	B	49	C	11	D	Nasal chambers are internal nose. Each cavity is the continuation of one of the two nostrils. Each nasal chamber has three parts - a Vestibule b Conditioner- respiratory region c

Series-A		Series-B		Series-C		Series-D		Remarks
Question No.	Answer	Question No.	Answer	Question No.	Answer	Question No.	Answer	
								Olfactory region
20	A	30	B	50	C	12	D	The maximum volume of air a person can breathe out after a forced inspiration is called vital capacity
21	B	31	C	1	D	13	A	Inhaled oxygen reaches the alveoli via lungs. Cells around the alveoli and the capillaries are not much thick and have more contact with each other. Therefore more oxygen passes into the blood through the space between them
22	A	32	B	2	C	14	A	Oxygen binds to hemoglobin and forms oxyhemoglobin which transports it from the lungs to the tissues. Around 98% of oxygen is transported to cells by hemoglobin
23	A	33	B	3	C	15	D	The breathing rate in human is controlled by the medulla oblongata in which inspiratory and expiratory centres are located
24	B	34	C	4	D	16	A	It is the removal of an amine group from a molecule. Enzymes that catalyse this reaction are called deaminases. In the human body, deamination takes place in the liver
25	A	35	B	5	C	17	D	Neurons are the fundamental unit of the nervous system specialized to transmit information to different parts of the body
26	B	36	C	6	D	18	A	The centrioles in the centrosome initiate spindle formation for cell division to take place. Neurons lack this organelle and hence cannot divide
27	A	37	B	7	C	19	D	A synapse is a junction between two nerve cells, consisting of a minute gap across which impulses pass by diffusion of a neurotransmitter
28	C	38	A	8	B	20	C	Blood is a fluid connective tissue. It connects all the organ systems of the body by transporting oxygen, nutrients, hormones, etc., and removing wastes from these organs
29	A	39	B	9	C	21	D	Brain and spinal cord connected to each other through brain stem and constitutes central nervous system responsible for everything we do
30	D	40	A	10	B	22	C	Frenulum is a small fold of mucous membrane extending from floor of the mouth to midline of the underside of the tongue
31	C	41	D	11	A	23	B	The Eustachian tube is present between the nasopharynx and the middle ear. It helps drain fluid and equalize the air pressure inside

Series-A		Series-B		Series-C		Series-D		Remarks
Question No.	Answer	Question No.	Answer	Question No.	Answer	Question No.	Answer	
								your ears
32	C	42	D	12	A	24	B	The urethral sphincters are two muscles used to control the exit of urine in the urinary bladder through the urethra
33	D	43	A	13	B	25	C	Urination is the process of excreting urine from the urinary bladder. This is also known as the voiding phase of micturition
34	D	44	A	14	B	26	C	The diastolic blood pressure indicates the pressure in the arteries when the heart rests between beats. A normal diastolic blood pressure number is 80 mm hg
35	A	45	B	15	C	27	A	Angina is usually caused by the arteries supplying blood to the heart muscles becoming narrowed by a build-up of fatty substances
36	C	46	D	16	A	28	B	It is a long-term autoimmune disorder, primarily affecting the small intestine, where individuals develop intolerance to gluten, present in foods such as wheat, rye and barley. It is not a heart disease
37	D	47	A	17	B	29	C	Electrocardiography is the process of producing an electrocardiogram, a recording of the heart's electrical activity through repeated cardiac cycles
38	C	48	D	18	A	30	B	Spermatogenesis is the process of creating sperm cells. This process begins in the seminiferous tubules within the testicles. These tubules produce sperm cells called spermatocytes
39	B	49	C	19	D	31	A	The primary sex organs in females are a pair of ovaries, which produce ova or egg and they also secrete female sex hormones like progesterone and estrogen
40	B	50	C	20	D	32	A	The term "cells" was first coined in 1665 by a British scientist Robert Hooke
41	B	1	C	21	A	33	B	Airway [to open the airway]-Breath [to assess the presence or absence of spontaneous breathing and to provide ventilation]-Circulation [to assess pulselessness and to perform chest compression
42	B	2	C	22	D	34	A	An efficient dressing should be <b>sterile</b> germ-free and have a good degree of porosity to allow for oozing and sweating
43	D	3	D	23	D	35	D	The aims of first aid are to: preserve life, prevent illness or injury from becoming worse.

Series-A		Series-B		Series-C		Series-D		Remarks
Question No.	Answer	Question No.	Answer	Question No.	Answer	Question No.	Answer	
44	B	4	C	24	D	36	A	HIV belongs to the group of retroviruses, which have RNA as genetic material and have reverse transcriptase enzymes that help in the formation of DNA from RNA in host cells
45	A	5	B	25	C	37	D	Sex composition is expressed with the help of a ratio known as sex ratio. Thus, a sex ratio of 1000 implies complete parity between the two sexes
46	A	6	B	26	C	38	D	As per National Statistical Office data on state-wise literacy rate in the country, Kerala ranked highest with average literacy rate of 96.2%
47	B	7	C	27	D	39	A	Proportionate number of people in each age category in a given population
48	D	8	A	28	B	40	C	The water-soluble vitamins are Vitamin C and Vitamin B complex
49	B	9	C	29	D	41	A	Vit. C is present in citrus fruits like lemon, orange, grapes, kiwis, broccoli, kale, red cabbage etc
50	D	10	A	30	B	42	C	During the process of digestion, pepsin break down dietary proteins into their components, i.e., peptides and amino acids, which can be readily absorbed by the small intestine.