

## PAPER TYPE: A

### Sindh Public Service Commission, Hyderabad.

#### Pre-Interview Written Test for the Post Of Lecturer Physics (BPS-17) In Education & Literacy Department, Government Of Sindh.

Wednesday the 07<sup>th</sup> October, 2015

Time: 01:00 pm to 02:30 pm

Maximum marks: 100

#### QUESTION PAPER

##### General Instructions:

- 01 Candidates are to attempt all questions.
- 02 Write your Roll No., Name, Father's Name & Centre on the Answer Sheet within the given space.
- 03 Do not write this data anywhere else on the Answer sheet. Doing so will render the candidate disqualified.
- 04 Follow instructions on the Answer Sheet to mark your responses correctly. Answer carefully by filling one of the appropriate blank cells given in the Answer Sheet with black or blue ball pen only.
- 05 Sign your answer sheet in specified space.
- 06 Return your Question paper & Answer Sheet after the examination.

**Most Important:- any candidate found in possession of mobile phone or any similar device in the Examination hall will be expelled from the examination hall. Question paper is part of answer sheet for assessment purpose. No candidate is allowed to carry question paper/answer sheet out of the examination hall.**

01	A resistor of $4k\Omega$ with tolerance 10% is connected in parallel with a resistor of $6k\Omega$ with tolerance 10%. The tolerance of the parallel combination is nearly (A) 10% (B) 20% (C) 30% (D) 40%
02	A man can throw a ball to a maximum height of $h$ . He can throw the same ball to the maximum horizontal distance of _____ (A) $h$ (B) $2h$ (C) $h^2$ (D) $2h^2$
03	One projectile moving with velocity $V$ in space gets burst into 2 parts of masses in the ratio 1:3. The smaller part becomes stationary. What is the velocity of the other part? (A) $4V$ (B) $V$ (C) $4V/3$ (D) $3V/4$
04	A body is projected with the same velocity at angle $35^\circ$ , $70^\circ$ , $60^\circ$ , $20^\circ$ from the horizontal. The maximum range will be at (A) $35^\circ$ (B) $70^\circ$ (C) $60^\circ$ (D) $20^\circ$
05	The ratio of the weight of a man in a stationary lift and in a lift accelerating downward with a uniform acceleration 'a' is 3:2. The acceleration of the lift is (A) $g/3$ (B) $g/2$ (C) $g$ (D) $2g$
06	If momentum decreases by 20% kinetic energy will decrease: (A) 40% (B) 36% (C) 18% (D) 8%
07	When a proton and anti-proton annihilate, the energy release is (A) $3 \times 10^{-10}$ J (B) $3 \times 10^{-8}$ J (C) $3 \times 10^{-6}$ J (D) $3 \times 10^{-4}$ J
08	Kepler's law states that square of the time period of any planet about the sun is directly proportional to (A) $R$ (B) $1/R$ (C) $R^3$ (D) $1/R^3$
09	Satellite is revolving around earth. If its height is increased to four times the height of geo-stationary satellite, what will become its time period? (A) 8 days (B) 4 days (C) 2 days (D) 16 days
10	Escape velocity on earth is 11.2 km/s. What would be the escape velocity on a planet whose mass is 1000 times and radius is 10 times that of earth (A) 112 km/s (B) 11.2 km/s (C) 1.12 km/s (D) 3.7 km/s
11	A Carnot engine, with its cold body at $17^\circ C$ , has 50% efficiency. If the temperature of its hot body is now increase by $145^\circ C$ , the efficiency becomes. (A) 55% (B) 60% (C) 40% (D) 45%
12	What is the degree of freedom in case of a monoatomic gas? (A) 3 (B) 1 (C) 5 (D) None of these
13	A light spring of constant $K$ is cut into two equal parts. The spring constant of each part is (A) $K$ (B) $2K$ (C) $K/2$ (D) $4K$
14	The pitch of sound wave is related to its (A) Frequency (B) Amplitude (C) Velocity (D) Beats
15	At resonance, which of the following is maximum (A) Frequency (B) Wavelength (C) Velocity (D) Amplitude
16	What does not change, when sound enters from one medium to another? (A) Wavelength (B) Speed (C) Frequency (D) None of these

17	What will be the time period of a simple pendulum in a freely falling lift? (A) $\infty$ (B) 0 (C) $\sqrt{l/g}$ (D) $\sqrt{l/2g}$
18	A particle A has a charge +q and particle B has a charge +4q with each of them having the same mass m. When allowed to fall from rest through same electrical potential difference, the ratio of their aped $V_A: V_B$ will becomes (A) 2:1 (B) 1:2 (C) 1:4 (D) 4:1
19	If the plates of a charged parallel plates capacitors are pulled away from each other (A) Capacitance increase (B) Energy increase (C) Voltage increase (D) Voltage decrease
20	When a substance was heated, its conductivity was increased, what should it be out of the following (A) Metals (B) Insulators (C) Semi-conductors (D) Semi-metal
21	What will be the power dissipated through any of them if it is individually connected across the same battery (A) 30 W (B) 10/3 W (C) 90 W (D) 10 W
22	If the current in electric bulb decreases by 0.5% then the power in the bulb decreases by approximately (A) 0.5% (B) 2% (C) 1% (D) 0.25%
23	The substances which can be strongly magnetized are called (A) Ante-ferromagnetic (B) Paramagnetic (C) Diamagnetic (D) Ferromagnetic
24	Force acting on a charge moving in a magnetic field will not depend upon (A) Its mass (B) Amount of charge (C) Its Velocity (D) Intensity of magnetic field
25	One electron is moving in electric and magnetic fields. It will gain energy from (A) Magnetic field (B) Electric field (C) Both of these (D) None of these
26	In a photo electric cell, velocity of ejection of electron emitted depends upon (A) Frequency of the incident light (B) Intensity of the incident light (C) Work function of the metal (D) None of these
27	The minimum number of unequal forces whose sum can equal to zero is (A) 3 (B) 4 (C) 2 (D) 1
28	The ratio of the inertial mass to gravitational mass is equal to: (A) $\frac{1}{2}$ (B) 2 (C) 1 (D) 3
29	If the earth stopped rotating, the weight of objects at either pole would: (A) Be less (B) Be greater (C) Be same as before (D) Vary with latitude
30	Escape velocity from the earth surface is (A) 11.2 km/sec (B) 1.7 km/sec (C) 8 km/sec (D) 9.1 km/sec
31	Turbulent flow occurs when the Reynold number is above (A) 1000 (B) 800 (C) 500 (D) 5000
32	The substance which shows practically no elastic after effect is (A) Copper (B) Silk (C) Quartz (D) Rubber
33	Which of the following projection angles will result in the greatest range? (A) $48^\circ$ (B) $60^\circ$ (C) $37^\circ$ (D) $20^\circ$
34	Period of pendulum is determined by its: (A) Mass (B) Length (C) Speed (D) Amplitude
35	Distance from crest to crest of any wave is called (A) Frequency (B) Speed (C) Velocity (D) Wave length
36	Sound waves cannot be (A) Polarized (B) Diffracted (C) Reflected (D) Refracted
37	Which of the following instrument is used to be record sound? (A) Amplifier (B) Phonograph (C) Headphone (D) Dictaphone
38	Physical property which is most responsible for resonance is (A) Wave form (B) Frequency (C) Quality (D) Intensity
39	Power of lens is measured in (A) C.m (B) C.m <sup>2</sup> (C) Diopters (D) Meter
40	Image formed by a bi-convex lens is (A) Virtual (B) Erect (C) Real (D) Infinite
41	Which has shortest wave length? (A) X-rays (B) Alpha rays (C) Gama rays (D) Beta rays
42	Colour of star is an indication of its (A) Displacement (B) Velocity (C) Size (D) Distance
43	System of international unit in impulse (A) NS (B) NS <sup>-1</sup> (C) Kg m sec <sup>-1</sup> (D) kg m sec <sup>-2</sup>
44	In rotational motion the analog of force is (A) Torque (B) Momentum (C) Velocity (D) Speed
45	Angular momentum is conserved under (A) Central force (B) Variable force (C) Constant force (D) Uniform force
46	At which of the following places motion of a simple pendulum become fast (A) Murree (B) Lahore (C) Multan (D) Karachi
47	Velocity of sound is greatest in (A) Water (B) Air (C) Glass (D) Steel
48	Medium in which velocity of light remains constant is (A) Homogenous (B) Heterogeneous (C) Plane medium (D) None of these
49	Image obtained in case of a simple microscope (A) Virtual and erect (B) Real and erect (C) Real and inverted (D) Virtual and inverted

50	The scientist who correctly measured the velocity of light was (A) Maxwell (B) Galileo (C) Newton (D) Michelson
51	The phenomenon of land and sea breeze is a result of (A) Conduction (B) Convection (C) Radiation (D) Entropy
52	Pressure of a gas directly proportional to (A) Potential energy (B) Kinetic energy (C) Sound energy (D) Wind energy
53	The process in which pressure remain constant is called (A) Isothermal (B) Adiabatic (C) Isobaric (D) Isochoric
54	Normal temperature of human body in centigrade (A) 35°C (B) 36°C (C) 37°C (D) 38°C
55	The field inside a hollow spherical conductor is (A) Constantly zero (B) Constant but not necessarily zero (C) Function of charge on sphere (A) Function of distance from the centre
56	Capacity of a spherical conductor is numerically equal to (A) Surface area (B) Diameter (C) Radius (D) Volume
57	Minimum charge on any object cannot be less than (A) $1.6 \times 10^{-19} \text{c}$ (B) $1.1 \times 10^{-18} \text{c}$ (C) $1.3 \times 10^{-21} \text{c}$ (D) $1.8 \times 10^{-16} \text{c}$
58	Electric intensity at infinite distance from point charge will be (A) Infinite (B) Positive (C) Negative (D) Zero
59	Drift velocity of an electron is (C) $10^{-8} \text{m/sec}$ (B) 333m/sec (C) $3 \times 10^8 \text{m/sec}$ (D) $10^{-3} \text{m/sec}$
60	Heating effect caused by an electric circuit is written (A) $H = I^2 R t$ (B) $H = I^2 R$ (C) $H = IR^2 t$ (D) $H = IR^2$
61	Resister used in most of electronic devices are made of (A) Gold (B) Carbon (C) Copper (D) Rubber
62	Magnetic field inside the solenoid along its axis (A) Zero (B) Non-uniform (C) Strong and uniform (D) Infinite line
63	Magnetic field used in a moving coil galvanometer its (A) longitudinal (B) Transverse (C) Radial (D) Circular
64	Which one of the following cannot be measured with an Avometer? (A) Voltage (B) Resistance (C) Current (D) Inductance
65	An inductor coil may appear like a (A) LED (B) Toroid (C) Super conductor (D) Solenoid
66	Brushes used in a generator are commonly made up of (A) Iron (B) Steel (C) Carbon (D) Copper
67	Transformer obeys the Law of Conservation of (A) Flux (B) Power (C) Momentum (D) e.m.F
68	The transition absorbing of photons of highest frequency in hydrogen atom is (A) $j=1$ to $j=2$ (B) $j=2$ to $j=1$ (C) $j=2$ to $j=4$ (D) $j=4$ to $j=2$
69	Which of the following has the longest wave length? (A) X-rays (B) Visible light (C) Radio waves (D) Infrared
70	Compton effect is associated to (A) Alpha Rays (B) Beta Rays (C) Gama Rays (D) X-Rays
71	Who gave the idea of matter wave? (A) Einstein (B) Hygen (C) Plank (D) De-Broglie
72	Radio activity is associated with (A) Decay of Nucleus (B) Decay of atoms (C) Fusion Nuclei (D) Emissions of electrons
73	Tunel effect make a possible (A) Negative beta decay (B) Positive beta decay (C) Alpha decay (D) Gama decay
74	Highest energy electrons will be produced by (A) Visible light (B) X-rays (C) Gama rays (D) Ultra violet rays
75	Energy released in process of fusion is (A) Equal to fission (B) Less than fission (C) Greater than fission (D) Sometime greater and sometime less
76	Which of the following series of hydrogen falls in the infrared region (A) Lyman (B) Balmer (C) Bracket (D) Pefund
77	Positron was discovered by (A) Chadwick (B) Muller (C) Anderson (D) Bohr
78	PN junction can be used as (A) Amplifier (B) Oscillator (C) Moderator (D) Rectifier
79	Binding energy of Helium is (A) 20 Mev (B) 28.2 Mev (C) 31 Mev (D) 40 Mev
80	Darfur conflict is in: (A) Egypt (B) Tunisia (C) Sudan (D) None of these
81	Parachinar is the main town of: (A) North Waziristan (B) Khyber Agency (C) Kurram Agency (D) None of these

82	Which cell has no Nucleus: (A) Red blood cell (B) White blood cell (C) Nerve cell (D) Muscle cell
83	Melting of ice at poles is due to: (A) Chlorofluorocarbons (B) Global Warming (C) Green House Effect (D) Ozone Depletion
84	Bali is an Island of: (A) Indonesia (B) Malaysia (C) Singapore (D) Philippines
85	The International court of Justice is located in: (A) New York (B) Washington D.C (C) Geneva (D) The Hague
86	There are _____ members of SAARC (A) 5 (B) 6 (C) 7 (D) 8
87	Organization of Islamic Cooperation (OIC) has _____ official languages: (A) 1 (B) 2 (C) 3 (D) 4
88	Ulan Bator is the capital of: (A) Mongolia (B) Chad (C) Ivory Coast (D) Chechnya
89	Which Radio Station already existed at the time of creation of Pakistan: (A) Peshawar (B) Karachi (C) Quetta (D) None of these
90	In which Constitution of Pakistan, the Ministers were neither members of the parliament nor answerable to the Parliament: (A) 1956 (B) 1962 (C) 1973 (D) None of these
91	Founder of Muslim rule in India was: (A) Zaheeruddin Baabar (B) Sher Shah Suri (C) Qutubuddin Aibak (D) Mohamed Tughluq
92	Attock fort was constructed by: (A) Akbar (B) Shahjehan (C) Jehangir (D) Humayun
93	The largest tribal Agency in Pakistan, area-wise is: (A) Khyber Agency (B) South Waziristan (C) North Waziristan (D) Kurram Agency
94	Under the Indus Water Treaty of 1960 Pakistan has the right to use exclusively the water of: (A) Ravi, Sutlej and Chenab (B) Sutlej, Chenab and Jhelum (C) Chenab, Jhelum and Indus (D) None of these
95	The first TV station was established in Pakistan in: (A) 1966 (B) 1964 (C) 1971 (D) 1976
96	The first Nuclear Power Plant (KANUPP) was set up in Pakistan in: (A) 1970 (B) 1984 (C) 1972 (D) 1974
97	How much time the light takes to reach from the sun to the Earth: (A) Four minutes and 30 sec (B) Eight min and 15 sec (C) Seven min and 15 sec (D) Six min and 30 sec
98	Places experiencing equal impact of an earthquake are called: (A) Snowlines (B) Seismic belts (C) Seismic lines (D) None of these
99	For growth, Viruses require: (A) Dead host (B) Living host (C) Minerals (D) Simple sugars
100	The primary producers of organic matter in nature are: (A) Bacteria (B) Fish (C) Green plants (D) Human beings