

NOT TO BE OPENED BEFORE TIME OR TILL ASKED TO DO SO)

(BPH-EE-2019)

Sr. No. 10158

Code

B

SET-“Z”

Time : 1¼ Hours (75 minutes) Total Questions : 130 Max. Marks : 100

Candidate's Name : _____ Date of Birth : _____

Father's Name : _____ Mother's Name : _____

Roll No. _____ (in figure) _____ (in words)

Date of Examination : _____

(Signature of the Invigilator)

(Signature of the candidate)

CANDIDATES MUST READ THE FOLLOWING INSTRUCTIONS BEFORE STARTING THE QUESTION PAPER & FOLLOW THEM.

1. All questions under Part-A and Part-B are compulsory. Part-C is optional. The candidates may attempt either Optional Part-C (i) OR Optional Part-C(ii). All questions carry equal marks i.e. one mark each.
2. The candidate MUST return this question book-let and the OMR Answer-Sheet to the Invigilator concerned before leaving the Examination Hall, failing which a case of use of unfair-means / misbehaviour will be registered against him / her, in addition to lodging of an FIR with the police. Further the answer-sheet of such candidate will not be evaluated.
3. The candidate MUST NOT do any rough work OR writing in the OMR Answer-Sheet. Rough work, if any, may be done in the question book-let itself.
4. Keeping in view the transparency of the examination system, carbonless OMR Sheet is provided to the candidate so that a copy of OMR Sheet may be kept by the candidate.
5. Question Booklet along-with answer key of all the A,B,C and D code shall be got uploaded on the University Website immediately after the conduct of Entrance Examination. Candidates may raise valid objection/complaint if any, with regard to discrepancy in the question booklet/answer key within 24 hours of uploading the same on the University website. The complaint be sent by the students to the Controller of Examinations by hand or through email. Thereafter, no complaint in any case will be considered.
6. Use only Blue or Black **BALL POINT PEN** of good quality in the OMR Answer-Sheet.
7. There will be no negative marking. Each correct answer will be awarded one full mark Cutting, erasing, overwriting and more than one answer in OMR Answer-Sheet will be treated as incorrect answer.
8. BEFORE ANSWERING THE QUESTIONS, THE CANDIDATES SHOULD ENSURE THAT THEY HAVE BEEN SUPPLIED CORRECT AND COMPLETE QUESTION BOOK-LETS. COMPLAINTS, IF ANY, REGARDING MISPRINTING ETC. WILL NOT BE ENTERTAINED 30 MINUTES AFTER THE START OF EXAMINATION.



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Question No.	Questions
	Part-A (Physics)
1.	The blue colour of sky is due to (1) Reflection of light (2) Refraction of light (3) Scattering of light (4) Diffraction of light
2.	If two coherent sources of intensity ratio 25:1 interfere, then the ratio of intensity of maxima and minima in the interference pattern will be (1) 3:2 (2) 9:4 (3) 5:1 (4) 25:1
3.	Nuclear force between two nucleons depends on their (1) Mass (2) Charge (3) Spin (4) Both (2) and (3)
4.	Charge on a n-type semiconductor is (1) Zero (2) Negative (3) Positive (4) 10^{-6} coulomb
5.	If a zener diode has 9.1 V break down voltage with a maximum power dissipation of 273 mW, then maximum current that can pass through zener diode is (1) 40 mA (2) 30 mA (3) 20 mA (4) 10 mA

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Question No.	Questions
6.	Lenz's law in electromagnetic induction follows law of conservation of (1) Charge (2) Energy (3) Linear momentum (4) Angular momentum
7.	Resistance offered by a Capacitor to D.C. is (1) zero (2) negative (3) positive (4) infinite
8.	Mechanical analogue of inductance is (1) Displacement (2) Velocity (3) Energy (4) Mass
9.	The classification of Electromagnetic spectrum is roughly based upon (1) How the waves are produced (2) How the waves are detected (3) Both (1) and (2) (4) Wavelength of waves
10.	If the atmosphere of earth suddenly disappears then duration of day will (1) Increase by 4 minutes (2) Decrease by 4 minutes (3) No change (4) Can't be predicted

Question No.	Questions
21.	<p>A small insect enters the eye of person riding a bike, the person then applies sudden brakes to his bike without rubbing his eye and he found that the small insect got out of his eye. By which law of physics the small insect got out of eye</p> <p>(1) Newton's third law of motion (2) Newton's second law of motion (3) Newton's first law of motion (4) Newton's law of Gravitation</p>
22.	<p>Two bodies with masses m_1 and m_2 ($m_1 > m_2$) are joined by a massless string passing over fixed pulley. The centres of gravity of the two masses are initially at same height. Assume the pulley to be weightless. Then the downward acceleration of mass m_1 is</p> <p>(1) $\frac{m_1}{m_1 + m_2} g$ (2) $\frac{m_2}{m_1 + m_2} g$ (3) $\frac{m_1 - m_2}{m_1 + m_2} g$ (4) $\left[\frac{m_1 - m_2}{m_1 + m_2} \right]^2 g$</p>
23.	<p>A block of mass 1 kg lies on a horizontal surface in a truck. The coefficient of static friction between the block and the surface is 0.6. If the acceleration of truck is 5 ms^{-2}, the frictional force acting on the block is</p> <p>(1) 4 N (2) 5 N (3) 6 N (4) 10 N</p>
24.	<p>Two balls of different mass have same kinetic energy. The ball having greater momentum will be</p> <p>(1) Heavier one (2) Lighter one (3) Both have same (4) Can't say</p>
25.	<p>The moment of inertia of a ring of mass M and radius R about an axis through the diameter in its plane will be</p> <p>(1) $0.5 MR^2$ (2) MR^2 (3) $1.5 MR^2$ (4) $2 MR^2$</p>

Question No.	Questions
	Part-B (Chemistry)
36.	Which of the following is not a target molecule for drug function in body ? (1) Carbohydrates (2) Lipids (3) Vitamins (4) Proteins
37.	The pollutants released by jet aeroplane in the atmosphere as fluorocarbons are called (1) Photochemical oxidants (2) Photochemical reductants (3) Aerosols (4) Physical pollutants
38.	Which of the following pairs has the same size ? (1) Zn^{2+} , Hf^{4+} (2) Fe^{2+} , Ni^{2+} (3) Zr^{4+} , Ti^{4+} (4) Zr^{4+} , Hf^{4+}
39.	The coordination number and oxidation state number of Cr in $K_3Cr(C_2O_4)_3$ are respectively (1) 3 and + 3 (2) 3 and 0 (3) 6 and + 3 (4) 4 and + 2
40.	Ionic solids, with Schottky defects, contain in their structure (1) Cation vacancies only (2) Cation vacancies and interstitial cations (3) Equal number of cation and anion vacancies (4) Anion vacancies and interstitial anions