

UPPSC-AE 2021

UTTAR PRADESH PUBLIC SERVICE COMMISSION

Combined State Engineering
Services Examination

Assistant Engineer

Civil Engineering

Topicwise Previous Years Solved Papers

Objective Papers

General Hindi

General Studies

Practice Questions



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UPPSC-AE 2021 : Civil Engineering Previous Solved Papers

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Preface

UPPSC Assistant Engineer Examination has been always preferred by Engineers due to job stability and opportunity to work in home state. UPPSC Combined State Engineering Services examination is conducted time to time but not every year. MADE EASY team has made deep study of previous exam papers and observed that a good percentage of questions are of repetitive in nature, therefore previous year's papers are advisable to solve before a candidate takes the exam. This book is also useful for MP State Engineering Services, UPSC Engineering Services and other Competitive exams for Engineering graduates.



B. Singh (Ex. IES)

The current edition of this book contains complete solutions to all questions with accuracy. I have true desire to serve student community by providing good source of study and quality guidance. I hope this book will be proved an important tool to succeed in UPPSC and other competitive exams. Any suggestions from the readers for improvement of this book are most welcome.

With Best Wishes

B. Singh

CMD, MADE EASY

UPPSC : Exam Pattern

Combined State Engineering Services Examination 2019 Assistant Engineer examination

Paper I : Objective Maximum Time : 2½ Hours • Maximum Marks : 375 Each question carries 3 marks. There is a penalty of –1 mark for every wrong attempted answer	
General Hindi	25 Questions
Technical Paper I	100 Questions
Total	125 Questions (375 Marks)

Paper II : Objective Maximum Time : 2½ Hours • Maximum Marks : 375 Each question carries 3 marks. There is a penalty of –1 mark for every wrong attempted answer	
General Studies	25 Questions
Technical Paper II	100 Questions
Total	125 Questions (375 Marks)

Uttar Pradesh Public Service Commission

Combined State Engineering Services Examination

Assistant Engineer

Civil Engineering

Paper-I (Part A)

Engineering Mechanics, Strength of Materials and Structural Analysis:

Units and Dimensions, SI units, vectors, concept of force, Concept of particle and rigid body Concurrent, Non-Concurrent and parallel forces in a plane, moment of force and Varignon's theorem free body diagram, conditions of equilibrium Principle of virtual work, equivalent force system. First and second Moment of area, Mass moment of inertia, Static Friction, inclined plane and bearings, kinematics and kinetics, kinematics in Cartesian and Polar Coordinates, motion under uniform and non-uniform acceleration, motion under gravity, Kinetics of particle: Momentum and Energy principles, D'Alembert's principle, Collision of elastic bodies, rotation of rigid bodies, simple harmonic motion.

Strength of Materials:

Simple Stress and Strain, Elastic constants, axially loaded compression members, Shear force and bending moment, theory of simple bending, bending stress, Shear Stress, Beams of uniform strength, Leaf Spring, close coiled helical springs, Strain Energy in direct stress, bending & shear. Deflection of beams; Macaulay's method, Mohr's Moment area method, Conjugate beam method, unit load method, Torsion of shafts, Transmission of power, Elastic stability of columns, Euler's Rankin's and Secant formulae. Principal stresses and strains in two dimensions, Mohr's Circle, Theories of Elastic Failure, Thin and Thick cylinder, Stresses due to internal and external pressure- Lamé's equations.

Structural Analysis :

Castigliano's theorems I and II, Unit load method of consistent deformation applied to beams and pin jointed trusses. Slope-deflection, moment distribution, Kani's method of analysis and column Analogy method applied to indeterminate beams and rigid frames. Rolling loads and influence lines: Influence lines for reactions of beam, shear force and bending moment at a section of beam. Criteria for maximum shear force and bending moment in beams traversed by a system of moving loads, influence lines for simply supported plane pin jointed trusses. Arches: Three hinged, two hinged and fixed arches, rib shortening and temperature effects, influence lines in arches, Matrix methods of analysis: Force method and displacement method of analysis of indeterminate beams and rigid frames. Plastic Analysis of beams and frames: Theory of plastic bending, plastic analysis, statical method, Mechanism method. Unsymmetrical bending: Moment of inertia, product of inertia, position of neutral axis and principal axis, calculation of bending stresses.

(Part B)

Design of Structures: Steel, Concrete and Masonry Structures

Structural Steel Design:

Factors of safety and load factors, rivetted, bolted and welded joints and its connections, Design by working, stress/limit state method of tension and compression member, beams of built up section, rivetted and welded plate girders, gantry girders, stanchions with battens and lacing, slab and gusseted column bases, Design of highway and railway bridges: Through and deck type plate girder, Warren girder, Pratt truss.

Design of Concrete and Masonry Structures

Reinforced Concrete:

Working Stress and Limit State Method of design-Recommendations of B.I.S. codes, design of one way and two way slabs, stairs-case slabs, simple and continuous beams of rectangular, T and L sections, compression members under direct load with or without eccentricity, isolated and combined footings, Cantilever

and counter-fort type retaining walls, Water tanks: Design requirements as per B.I.S. code for rectangular and circular tanks resting on ground, Prestressed concrete: Methods and systems of prestressing, anchorages, analysis and design of sections for flexure based on working stress, losses of prestress, Earth quake resistant design of building as per BIS code. Design of brick masonry as per I. S. Codes, Design of masonry retaining walls.

(Part C)

Building Materials, Construction Technology, Planning and Management

Building Materials:

Physical properties of construction materials with respect to their use: stones bricks, tiles, lime, glass, cement, mortars, Concrete, concept of mix design, pozzolans, plasticizers, super plasticizers, Special concrete: roller compacted concrete, mass concrete, self compacting concrete, ferro cement, fibre reinforced concrete, high strength concrete, high performance concrete, Timber: properties, defects and common preservation treatments, Use and selection of materials for various uses e.g. Low cost housing, mass housing, high rise buildings.

Constructions Technology, Planning and Management:

Masonry constructions using brick, stone, construction detailing and strength characteristics paints, varnishes, plastics, water proofing and damp proofing materials. Detailing of walls, floors, roofs, staircases, doors and windows. Plastering, pointing, flooring, roofing and construction features. Retrofitting of buildings, Principle of planning of building for residents and specific uses, National Building code provisions and uses. Basic principles of detailed and approximate estimating, specifications, rate analysis, principles of valuation of real property. Machinery for earthwork, concreting and their specific uses, factors affecting selection of construction equipments, operating cost of equipments. Construction activity, schedules, organizations, quality assurance principles. Basic principle of network CPM and PERT uses in construction monitoring, cost optimization and resource allocation. Basic principles of economic analysis and methods. Project profitability: Basis principles of financial planning, simple toll fixation criterions.

Geo Technical Engineering and Foundation Engineering

Types of soils, phase relationships, consistency limits particles size distribution, classifications of soils, structure and clay mineralogy. Capillary water, effective stress and pore water pressure, Darcy's Law, factors affecting permeability, determination of permeability, permeability of stratified soil deposits. Seepage pressure, quick sand condition, compressibility and consolidation, Terzaghi's theory of one dimensional consolidation, consolidation test. Compaction of soil, field control of compaction total stress and effective stress parameters, pore pressure parameters, shear strength of soils, Mohr Coulomb failure theory, shear tests.

Earth pressure at rest, active and passive pressures, Rankin's theory Coulomb's wedge theory, Graphical method of earth pressure on retaining wall, sheetpile walls, braced excavation, bearing capacity, Terzaghi and other important theories, net and gross bearing pressure. Immediate and consolidation settlement, stability of slope, total stress and effective stress methods, conventional methods of slices, stability number. Subsurface exploration, methods of boring, sampling, penetration tests, pressure meter tests, essential features of foundation, types of foundation, design criteria, choice of type of foundation, stress distribution in soils, Boussinesq's theory, Westergaard method, Newmark's chart, pressure bulb, contact, pressure, applicability of different bearing capacity theories, evaluation of bearing capacity from field tests, allowable bearing capacity, settlement analysis, allowable settlement, proportioning of footing, isolated and combined footings,

rafts, pile foundation, types of piles, piles capacity, static and dynamic analysis, design of pile groups, pile load test, settlement of piles lateral loads, foundation for bridges, Ground improvement techniques: sand drains, stone columns, grouting, soil stabilization geotextiles and geomembrane, Machine foundation: Natural frequency, design of machine foundations based on the recommendation of B.I.S. codes.

Paper-II (Part A)

Fluid Mechanics, Open Channel Flow, Hydraulic Machines and Hydro-power Engineering

Fluid Mechanics : Fluid properties and their roles in fluid motion, fluid statics including forces acting on plane and curved surfaces, Kinematics and Dynamics of Fluid flow: Velocity and acceleration, stream lines, equation of continuity, irrotational and rotational flow, velocity potential and stream functions, flownet, methods of drawing flownet, source and sink, flow separation, free and forced vortices.

Flow control volume equation, continuity, momentum and energy equations, Navier- Stokes equation, Euler's equation of motion and application to fluid flow problems, pipe flow, plane, curved, stationary and moving vanes sluice gates, weirs, orifice meters and Venturi meters.

Dimensional Analysis and Similitude: Buckingham's Pi-theorem, dimensionless parameters, similitude theory, model laws, undistorted and distorted models.

Laminar flow : Laminar flow between parallel, stationary and moving plates, flow through pipes.

Boundary Layer : Laminar and turbulent boundary layer on a flat plate, laminar sub-layer, smooth and rough boundaries, submerged flow, drag and lift and its applications.

Turbulent flow through pipes : Characteristics of turbulent flow, velocity distribution, pipe friction factor, hydraulic grade line and total energy line, siphons, expansion and contractions in pipes pipe networks, water hammer in pipes and surge tanks.

Open Channel Flow : Flow types, uniform and nonuniform flows, momentum and energy correction factors, Specific energy and specific force, critical depth, resistance equations and roughness coefficient, rapidly varied flow, flow in transitions, Brink flow, Hydraulic jump and its applications, waves and surges, gradually varied flow, classification of surface profiles, control section, Integration of varied flow equation and their solution.

Hydraulic Machines and Hydropower:

Centrifugal pumps-Types, characteristics, Net Positive Suction-head (NPSH), specific speed, Pumps in series and parallel. Reciprocating pumps, Air vessels, Hydraulic ram, efficiency parameters, Rotary and positive displacement pumps, diaphragm and jet pumps.

Hydraulic turbines : types, classification, Choice of turbines, performance parameters, controls, characteristics, specific speed.

Principles of hydropower development : Types, layouts and component works, surge tanks, 'types and choice, Flow duration curves and dependable flow, Storage and pondage, Pumped storage plants, Special types of hydel plants.

(Part B)

Hydrology and Water Resources Engineering

Hydrology: Hydrologic cycle, precipitation, evaporation, transpiration, infiltration, overland flow, hydrographs, flood frequency analysis, flood routing through a reservoir, channel flow routing- Muskingam method.

Ground Water Flow : Specific yield, storage coefficient, coefficient of permeability, confined and unconfined aquifers, radial flow into a well under confined and unconfined conditions, Openwells and tube wells. Ground and surface water recourses single and multipurpose projects, storage capacity of reservoirs, reservoir losses, reservoir sedimentation. Water requirements of crops consumptive use, duty and delta, irrigation methods, Irrigation efficiencies.

Canals : Distribution systems for cannaal irrigation, canal capacity, canal losses, alignment of main and distributory canals, Design of cannaal by Kennedy's and Lacey's theorie, Water logging and its prevention.

Diversion head works : Compenents, Principles and design of weirs on permeable and impermeable foundations, Khosla's theory, Bligh's creep theory Storage works. Cross drainage works. Types of dams, design principles of gravity and earth dams, stability analysis. Spillways: Spillway types energy dissipation.

River training : Objectives of river training, methods of river training and bank protection.

(Part C)

Transportation Engineering

Highway Engineering : Principles of Highway alignments, classification and geometric design, elements and standards for roads.

Pavement: flexible and rigid pavements Design principles and methodology. Construction methods and materials for stabilized soil. WBM, Bituminous works and Cement Concrete roads.

Surface and sub-surface drainage arrangements for roads, culvert structures. Pavement distresses and strengthening by overlays. Traffic surveys and their application in traffic planning, Typical design features for channelized, intersection, rotary etc., signal designs, standard traffic signs and markings.

Railway Engineering: Permanent way, ballast, sleeper, chair and fastenings, points, crossings, different types of turn outs, cross-over, setting out of points, Maintenance of track, super elevation, creep of rails ruling gradients, track resistance tractive effort, curve resistance, Station yards and station buildings, platform sidings, turn outs, Signals and interlocking, level crossings.

Air port Engineering : Layouts, Planning and design.

(Part D)

Environmental Engineering

Water supply: Estimation of water demand, impurities in water and their significance, physical, chemical and bacteriological parameters and their analysis, waterborne diseases, standards for potable water.

Water collection & treatment: Intake structures, principles and design of sedimentation tank, coagulation cum flocculation units slow sand filter, rapid sand filter and pressure filter, theory & practices of chlorination, water softening, removal of taste and salinity, Sewerage Systems, Domestic and industrial wastes, storm, sewage, separate and combined systems, flow through sewers, design of sewers.

Waste water characterization: Solids, Dissolved oxygen (DO), BOD COD, TOC, and Nitrogen, Standards for disposal of effluent in normal water course and on to land.

Waste water treatment: Principles and design of wastewater Treatment units-- Screening, grit chamber, sedimentation tank activated sludge process, trickling filters, oxidation ditches, oxidation ponds, septic tank; Treatment and disposal of sludge; recycling of waste water.

Solid waste management: Classification, Collection and disposal of solid waste in rural and urban areas, Principles of solid waste management.

Environmental pollution : Air and water pollution and their control acts. Radioactive waste and their disposal Environmental impact assessment of Thermal power Plants, mines and river valley projects, Sustainable development.

(Part E)

Survey and Engineering Geology

(a) Surveying: Common methods and instruments for distance and angle measurements in Civil Engineering works, their use in plane table traverse survey, levelling, triangulation, contouring and topographical maps. Survey layouts for culverts canal, bridge, roads, railway alignment and buildings.

Basic principles of photogrammetry and remote sensing.

Introduction to Geographical information system.

Engineering Geology : Basic concepts of Engineering geology and its applications in projects such as dams, bridges and tunnels.

■■■■

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UPPSC-AE

Combined State Engineering
Services Examination

Section-A

Civil Engineering



Topicwise

Objective Solved Papers

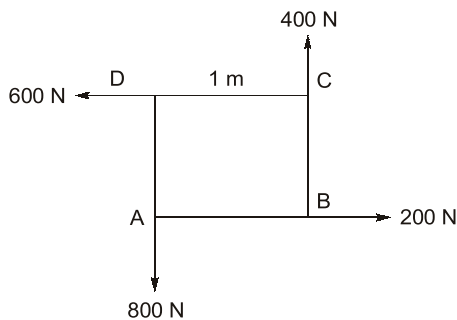
2007 (II)

- Q.1** Moment of Inertia of a triangular cross-section of height d and base width b about its centroid axis parallel to base is

- (a) $\frac{bd^3}{36}$ (b) $\frac{bd^3}{24}$
 (c) $\frac{bd^3}{12}$ (d) $\frac{bd^3}{6}$

2019

- Q.2** Four forces having magnitudes of 200 N, 400 N, 600 N and 800 N, respectively acting along four sides (1 m each) of a square ABCD as shown in figure. Determine the magnitude and direction of the resultant force from 'A' along the line 'AB'.



- (a) $400\sqrt{3}$ N, 3.2 m from A
 (b) $400\sqrt{2}$ N, 2.5 m from A

- (c) $300\sqrt{2}$ N, 2 m from A
 (d) $300\sqrt{3}$ N, 2.5 m from A

- Q.3** A bullet of mass 30 gm leaves the barrel of a gun with a velocity of 500 m/s. Suppose, the force lasted, for 0.0018 seconds, the average impulsive force is

- (a) 5333.33 N (b) 6333.33 N
 (c) 7333.33 N (d) 8333.33 N

- Q.4** A particle undergoes a simple harmonic motion, the acceleration of the particle at a distance of 1.5 m from the centre of motion being 6 m/s^2 , the time of oscillation in seconds is

- (a) 2.00 (b) 4.00
 (c) 3.14 (d) 6.28

- Q.5** The coefficient of friction is the ratio of
 (a) Limiting friction force to the normal reaction
 (b) Limiting friction force to the weight of body to be moved
 (c) Sliding friction force to the normal reaction
 (d) None of the above

- Q.6** The D'Alembert principle
 (a) is a hypothetical principle
 (b) provides no special advantage over Newton's law
 (c) is based upon the existence of inertia force
 (d) allows a dynamical problem to be considered as a static problem



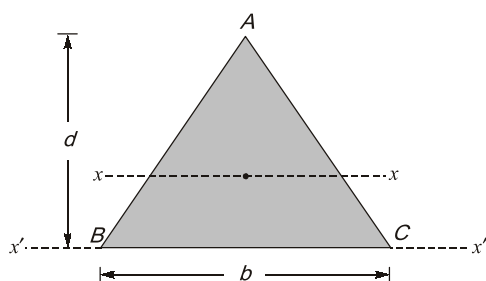
Answers | Engineering Mechanics

1. (a) 2. (b) 3. (d) 4. (c) 5. (a) 6. (d)

Explanations | Engineering Mechanics

1. (a)

We know that

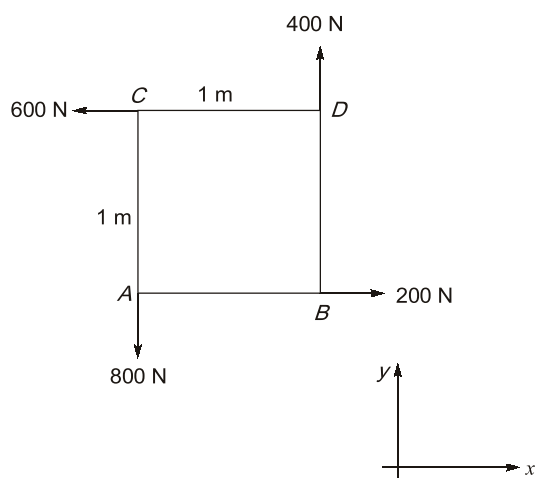


$$I'_x = \frac{bd^3}{12}$$

$$I_x = \frac{bd^3}{36}$$

Hence option (a) is correct.

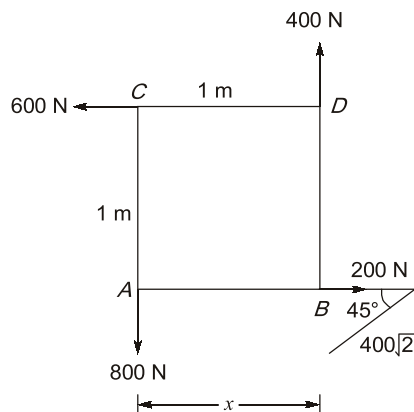
2. (b)



$$\Sigma F_x = -400 \text{ N}$$

$$\Sigma F_y = -400 \text{ N}$$

So resultant force = $400\sqrt{2} \text{ N}$



$$\Sigma M_A = 0$$

$$(400\sqrt{2} \sin 45^\circ)x = 4w + 600$$

$$x = 2.5 \text{ m}$$

3. (d)

Average impulsive force,

$$I = \frac{MW}{dt} = \frac{30 \times 10^{-3} \times 500}{0.0018} = 8333.3 \text{ N}$$

4. (c)

$$F = ma$$

$$\text{Spring force} = kx$$

$$6 \text{ m} = 1.5 k$$

$$k/m = 4$$

Time of oscillation (sec)

$$= 2\pi \left(\sqrt{\frac{m}{k}} \right) = 2\pi \sqrt{\frac{1}{4}}$$

$$= \frac{2\pi}{2} = \pi = 3.14 \text{ sec}$$

5. (a)

$$f = \frac{\text{Limiting friction force}}{\text{Normal reaction}}$$

यू.पी.पी.एस.सी.

संयुक्त राज्य अभियांत्रिकी सेवा परीक्षा

Section-B

Civil Engineering



सामान्य हिन्दी

Q.1 'एक तो करेला दूजे नीम चढ़ा' का सही अर्थ निर्देशित कीजिए।

- (a) करेला खाये तो नीम पर न चढ़े।
- (b) नीम पर चढ़ा करेला कढ़वा होता है।
- (c) करेला और नीम दोनों कड़वे होते हैं।
- (d) किसी दुर्जन के साहचर्य से दुष्ट व्यक्ति की दुष्टता में और अधिक वृद्धि।

Q.2 'गंगा गये गंगादास, जमुना गये जमुनादास' का अर्थ है।

- (a) संगम में विधिपूर्वक स्नान करना।
- (b) गंगा और यमुना का परम भक्त होना।
- (c) अवसरवादी होना।
- (d) धार्मिक व्यक्ति होना।

Q.3 शुद्ध वर्तनी वाला शब्द।

- (a) सन्यासी
- (b) संयासी
- (c) सनयासी
- (d) संन्यासी

Q.4 शुद्ध शब्द है

- (a) उपरोक्त
- (b) उपरियुक्त
- (c) उपर्युक्त
- (d) उपरिवक्त

Q.5 निम्नलिखित में कौन सा शब्द पुल्लिंग नहीं है?

- (a) घी
- (b) पानी
- (c) मनमानी
- (d) दानी

Q.6 उर्दू को 'दूसरी राजभाषा' के रूप में मान्यता है

- (a) पश्चिम बंगाल में
- (b) तमिलनाडू में
- (c) उत्तर-प्रदेश में
- (d) महाराष्ट्र में

Q.7 'एक अनार सौ बीमार'

- (a) मुहावरा है।
- (b) कहावत है।
- (c) सूक्ति है।
- (d) कोई नहीं।

Q.8 समान अर्थ वाला युग्म शब्द है।

- (a) कथा-कत्था
- (b) कड़ाही-कढ़ाई
- (c) बेला-बेला
- (d) नीरज-अम्बुज

Q.9 अंग्रेजी इन्ट्रो (Intro) शब्द का प्रयोग किस क्षेत्र में किया जाता है?

- (a) समाचार लेखन हेतु।
- (b) सचिवालय में प्रवेश हेतु।
- (c) क्रिकेट टीम में सम्मिलित होने हेतु।
- (d) राजकीय सेवा में नियुक्ति हेतु।

Q.10 'इन दोनों कमरों एक दीवार है।' रिक्त स्थान की पूर्ति के लिए उपयुक्त शब्द कौन सा है?

- (a) मैं
- (b) के अन्दर
- (c) के बीच में
- (d) के बीच

Q.11 'मेरी कन्या का विवाह होने जा रहा है।' वाक्य में रिक्त स्थान की पूर्ति के लिए उपयुक्त शब्द है।

- (a) सौभाग्यवती
- (b) सुहागन
- (c) सौभाग्याकांक्षिणी
- (d) सौभाग्योत्सुक

Q.12 निम्नलिखित शब्द समूहों में भिन्न अर्थ देने वाला शब्द है

- (a) पवन
- (b) मारुत
- (c) अनल
- (d) समीर

Q.13 'संयोग' शब्द का उपयुक्त विलोम है

- (a) अयोग
- (b) वियोग
- (c) प्रयोग
- (d) दुरयोग

Q.14 'पत्थर' का तत्सम शब्द है

- (a) प्रस्तर
- (b) पाहन
- (c) चट्टान
- (d) कंक्रीट

Q.15 निम्नलिखित शब्दों में अव्यय बताइए।

- (a) आया
- (b) किन्तु
- (c) नहीं
- (d) वह

Q.16 जागति का विलोम है

- (a) प्रगति (b) कान्ति
(c) शन्ति (d) सुषुप्ति

Q.17 शुद्ध शब्द है

- (a) प्रौद्योगिकी (b) प्रौद्योगीकी
(c) प्रौद्योगीकि (d) प्रोद्योगिकी

Q.18 शुद्ध वाक्य है

- (a) प्रज्ञाचक्षु को हरा रंग पसन्द है।
(b) प्रज्ञाचक्षु ने लाल कमल वाला जलाशय देखा।
(c) प्रज्ञाचक्षु ने चुपचाप सुना।
(d) प्रज्ञाचक्षु ने दर्पण देखा।

Q.19 'नाच न जाने आँगन टेढ़ा' का अर्थ है

- (a) नाच न जानना।
(b) आँगन में दोष होना।
(c) आँगन टेढ़े होने से नाच न आना।
(d) अपनी आयोग्यता छिपाने के लिए साधन को दोष देना।

Q.20 'रंगा सियार' का अर्थ है

- (a) धूर्त आदमी। (b) औसत सियारों से अलग।
(c) सुन्दर सियार। (d) अन्धा सियार।

Q.21 'हिमकर' का विलोम है

- (a) शशिकर (b) शीतकर
(c) सुखद (d) दिनकर

Q.22 भोजपुरी किस जिले में नहीं बोली जाती है?

- (a) वाराणसी (b) आजमगढ़
(c) इटावा (d) गोरखपुर

Q.23 निम्नलिखित में एक वर्गीय व्यंजन नहीं है

- (a) च (b) क
(c) त (d) ह

Q.24 हिन्दी की वह बोली जो देश के बाहर भी बोली जाती है

- (a) खड़ी बोली (b) भोजपुरी
(c) छत्तीसगढ़ी (d) बुन्देलखण्डी

Q.25 खड़ी बोली के कवि हैं

- (a) तुलसीदास
(b) सूरदास
(c) अयोध्यासिंह उपाध्याय 'हरिऔध'
(d) देव

Q.26 'आई' प्रत्यय किस शब्द में नहीं है?

- (a) विदाई (b) खाई
(c) ढिठाई (d) चिकनाई

Q.27 'उसके गले में बेड़ी पड़ी थी' वाक्य अशुद्ध है क्योंकि

- (a) क्रिया अशुद्ध है।
(b) काल दोष है।
(c) 'बेड़ी' गले में नहीं पड़ती।
(d) वचन दोष है।

Q.28 'सीमा, जाओ बाहर खेलो' कैसा वाक्य है?

- (a) इच्छाबोधक (b) आज्ञावाचक
(c) संकेतार्थक (d) निषेधात्मक

Q.29 जो कठिनाई से समझ में आये

- (a) दुर्बोध (b) दुष्कर
(c) कठिन (d) उलझनयुक्त

Q.30 कौन सा शब्द 'सु' उपसर्ग से नहीं बना है?

- (a) सुकर्म (b) सुगम
(c) सुअर (d) सुमन

Q.31 निम्नलिखित वाक्य में रिक्त स्थान की पूर्ति हेतु सही विकल्प को चिहनांकित कीजिए

हमें गरीबों दया करनी चाहिए।

- (a) के ऊपर (b) से
(c) के लिए (d) पर

Q.32 'सदैव रहने वाला' अर्थ को प्रकट करता है

- (a) सामयिक (b) समसाययिक
(c) शाश्वत (d) पुरातन

Q.33 गौतमबुद्ध के प्रवचन किस भाषा में है?

- (a) संस्कृत (b) प्रकृत
(c) पालि (d) हिन्दी

Q.34 विनयपत्रिका की भाषा है

- (a) अवधी (b) ब्रजभाषा
(c) खड़ी बोली (d) भोजपुरी

Q.35 इनमें से कौन भाषा वैज्ञानिक नहीं है?

- (a) जार्ज प्रिंसर्सन (b) डॉ. हरदेव बाहरी
(c) सुभद्राकुमारी चौहान (d) डॉ. भोलानाथ तिवारी

- Q.36** 'सरस्वती' पत्रिका के सम्पादक थे
 (a) डॉ. हजारीप्रसाद द्विवेदी
 (b) शान्तिप्रिय द्विवेदी
 (c) महावीर प्रयाद द्विवेदी
 (d) निराला
- Q.37** आधुनिक हिन्दी गद्य के जनक हैं
 (a) बालकृष्ण भट्ट (b) श्याम सुन्दर दास
 (c) प्रेमचन्द (d) भारतेन्दु हरिश्चन्द्र
- Q.38** निम्नलिखित में से कौन सी भाषा आर्य भाषा की श्रेणी में नहीं रखी जाती?
 (a) कन्नड़ (b) पंजाबी
 (c) असमी (d) उड़िया
- Q.39** उर्दू किस लिपि में लिखी जाती है?
 (a) अरबी (b) फारसी
 (c) ब्राह्मी (d) देवनागरी
- Q.40** जन्म सम्बन्ध की दृष्टि से हिन्दी किस भाषा के सर्वाधिक निकट है?
 (a) अपभ्रंश (b) पालि
 (c) प्राकृत (d) संस्कृत
- Q.41** शुद्ध वाक्य बताइए।
 (a) हम कहता हूँ। (b) मैं कहते हैं।
 (c) हम कहती हूँ। (d) मैं कहता हूँ।
- Q.42** कृतज्ञ कहते हैं
 (a) उपकार न मानने वाले को।
 (b) सत्य बोलने वाले को।
 (c) निन्दा न करने वाले की।
 (d) उपकार मानने वाले को।
- Q.43** निम्नलिखित शब्दों में एक पर्यायवाची नहीं है
 (a) तनुजा (b) अनुजा
 (c) सुता (d) दुहिता
- Q.44** शुद्ध वर्तनी वाला शब्द खोजिए
 (a) नायका (b) नाइका
 (c) नाईका (d) नायिका
- Q.45** जो कानून के विरुद्ध हो, उसे कहते हैं
 (a) विधिविहीन (b) कानूनद्रोही
 (c) अवैध (d) कानूनप्रेमी
- Q.46** 'नमस्कार' शब्द का सन्धि विच्छेद होगा
 (a) नम + स्कार (b) नमः + कार
 (c) न + सस्कार (d) नमो + स्कर
- Q.47** वह एक शब्द जो 'कानून', 'तरीका' तथा 'ईश्वर' के लिए प्रयुक्त होता है
 (a) वकील (b) विधाता
 (c) रीति (d) विधि
- Q.48** 'अभिज्ञ' शब्द का संबंधित उपयुक्त विलोम है
 (a) अनभिज्ञ (b) भिज्ञ
 (c) समिज्ञ (d) अनाभिज्ञ
- Q.49** 'अतिवृष्टि' शब्द का युक्तियुक्त विलोम शब्द है
 (a) अनावृष्टि (b) अवृष्टि
 (c) अनवृष्टि (d) अल्पवृष्टि
- Q.50** 'आचार' शब्द में कौन सा उपसर्ग लगाने से उसका अर्थ 'जुल्म' हो जाता है
 (a) दुर् (b) अन्
 (c) सत् (d) अति
- Q.51** 'धर्मनिरपेक्षता' के लिए उपयुक्त अर्थ वाला शब्द है
 (a) धर्म विमुखता (b) सर्वधर्म समभाव
 (c) धर्मान्तरण (d) धर्मयुद्ध
- Q.52** 'मेरा यहाँ से अन्न उठ गया।' वाक्य में रिक्त स्थान के लिए उपयुक्त युग्मक-पूरक शब्द निर्दिष्ट कीजिए।
 (a) पानी (b) दाना
 (c) जल (d) भोजन
- Q.53** 'तत्सम' शब्द किस श्रेणी में आता है?
 (a) हिन्दी शब्द-समूह (b) संस्कृत शब्द-समूह
 (c) देशज शब्द-समूह (d) विदेशी शब्द-समूह
- Q.54** निम्नलिखित में कौन सा शब्द तद्भव है?
 (a) आधा (b) कूप
 (c) विद्या (d) व्योम
- Q.55** 'मुझे मित्रों से कोई शिकायत नहीं है।' वाक्य में रिक्त स्थान के लिए उपयुक्त सर्वनाम निर्दिष्ट कीजिए।
 (a) मेरे (b) अपने
 (c) हमारे (d) अनेकों

- Q.56** अशुद्ध वाक्य निर्दिष्ट करें।
 (a) अतिरिक्त विनम्रता धूर्तता की निशानी होती है।
 (b) बिहारी के दोहे रस से आलौकित हैं।
 (c) दर्शनार्थियों की भीड़ एकत्र थी।
 (d) म तकों के इलाज की उत्तम व्यवस्था है।
- Q.57** 'जलद' का समानार्थी है
 (a) मेघ (b) कमल
 (c) पर्वत (d) सरोवर
- Q.58** 'त्रिपुरारि' शब्द का अर्थ है
 (a) राक्षस (b) शिव
 (c) विष्णु (d) ब्रह्मा
- Q.59** शुद्ध वाक्य है
 (a) हम राजेन्द्र बाबू को कई बार देखे थे।
 (b) वह बहुत सज्जन आदमी हैं।
 (c) वह कमर बाँधें बैठा था।
 (d) आज इस प्रश्न का उत्तर दे पाना कठिन है।
- Q.60** 'अभ्युदय' का विलोम है
 (a) पराजय (b) अधःपतन
 (c) पूर्वोदय (d) पवोदय
- Q.61** सही वर्तनी है
 (a) सौहार्द्र (b) सौहार्द
 (c) सौर्हाद (d) सौहाद्र
- Q.62** अशुद्ध वर्तनी वाला शब्द है
 (a) पुरस्कार (b) बहिस्कार
 (c) तिरस्कार (d) पुरुस्कार
- Q.63** वीर पुत्र को जन्म देने वाली स्त्री को कहते हैं
 (a) वीरांगना (b) वीर महिषी
 (c) वीरप्रसू (d) वीरात्मा
- Q.64** 'कर्मचारियों की कुछ मांगें नहीं मानी गई वे बिलकुल गलत थीं।' वाक्य में रिक्त स्थान की पूर्ति के लिए उपयुक्त विकल्प है
 (a) क्योंकि (b) जबकि
 (c) अपितु (d) परन्तु
- Q.65** 'षट्पद' का पर्यायवाची है
 (a) तितली (b) मकड़ी
 (c) भ्रमर (d) शलभ
- Q.66** 'मछली' का पर्याय नहीं है
 (a) मीन (b) मत्स्य
 (c) झख (d) शबरी
- Q.67** कौन सा शब्द पुल्लिंग है?
 (a) दही (b) मिठाई
 (c) हवा (d) धूप
- Q.68** 'आखर' शब्द का तत्सम रूप है
 (a) आगर (b) आखिर
 (c) आँचर (d) अक्षर
- Q.69** 'निर्माण-निर्वाण' के लिए कौन सा अर्थ अधिक उपयुक्त है?
 (a) स हन-संहार (b) निर्माण-विध्वंस
 (c) स जन-मोक्ष (d) खण्डन-मण्डन
- Q.70** कौन सा शब्द सूर्य का पर्यायवाची है?
 (a) ईश (b) अक्षि
 (c) आदित्य (d) मयंक
- Q.71** 'अपनी नींद सोना-अपनी नींद जागना' का उपयुक्त अर्थ है
 (a) सही समय पर सोना - सही समय पर जागना।
 (b) चाहे जब सोना - चाहे जब जागना।
 (c) मदमस्त होना।
 (d) चैन का जीवन व्यतीत करना।
- Q.72** 'खग जाने खग की भाषा' का अर्थ है
 (a) एक पक्षी दूसरे पक्षी की भाषा जानता है।
 (b) एक चिड़िया दूसरी चिड़िया की बात जान लेती है।
 (c) किसी समाज के लोग एक दूसरे के विचार जानते हैं।
 (d) एक ही समुदाय के दो व्यक्ति एक दूसरे का भाव समझ लेते हैं।
- Q.73** 'इस वर्ष अच्छी फसल होने की है।' इस वाक्य में रिक्त स्थान की पूर्ति के लिए कौन सा शब्द उपयुक्त है?
 (a) कल्पना (b) चिन्ता
 (c) आशंका (d) सम्भावना
- Q.74** 'ज्यों ज्यों डूबे स्याम त्यों-त्यों उज्ज्वल होय' में अलंकार है
 (a) विरोधाभास (b) श्लेष
 (c) उपमा (d) उत्प्रेक्षा

- Q.75** निम्नलिखित शब्द रूपों में से वर्तनी का शुद्ध रूप कौन सा है?
 (a) टिप्पणि (b) टिप्पड़ी
 (c) टिप्पणी (d) टिपणी
- Q.76** 'नाक का बाल होना' का अर्थ है
 (a) प्रिय होना (b) फालतू होना
 (c) कष्टदायक होना (d) गन्दगी में रहना
- Q.77** 'गोबर' का तत्सम है
 (a) गुर्बर (b) गोमय
 (c) गोहवर (d) गुब्बर
- Q.78** जिसकी पत्नी मर गयी है उसके लिए उपयुक्त शब्द होगा
 (a) पत्नीहीन (b) पत्नीहन्ता
 (c) विरही (d) विधुर
- Q.79** किस शब्द में अति उपसर्ग नहीं जुड़ा है?
 (a) अतिथि (b) अत्यन्त
 (c) अत्याचार (d) अतिशय
- Q.80** बहुत अधिक बोलने वाला व्यक्ति
 (a) प्रवक्ता (b) वक्ता
 (c) वाचाल (d) अधिवक्ता
- Q.81** 'शाक्त' शब्द का अर्थ है
 (a) शक्तिशाली (b) बलवान्
 (c) शक्ति का आराधक (d) शाकाहारी
- Q.82** ईश्वर की सत्ता में विश्वास रखने वाला
 (a) धर्मात्मा (b) अन्धविश्वासी
 (c) नास्तिक (d) आस्तिक
- Q.83** जीने की इच्छा के लिए प्रयुक्त शब्द
 (a) जीजीबिषा (b) जिजीविषा
 (c) जीजिविषा (d) जिजिविषा
- Q.84** 'लाल-पीला होना' का अर्थ है
 (a) फैशन करना (b) रंगीन होना
 (c) होली खेलना (d) क्रुद्ध होना
- Q.85** स्वागत =
 (a) स्वा + गत (b) सु + वागत
 (c) सु + आगत (d) स्व + आगत
- Q.86** 'फटाफट' शब्द इनमें से किस वर्ग का है?
 (a) तत्सम (b) तद्भव
 (c) देशी (d) विदेशी
- Q.87** 'अरण्य रोदन' का वास्तविक अर्थ है
 (a) जंगल में रोना (b) बेसुरा गायन
 (c) बिरह गीत (d) निष्फल निवेदन
- Q.88** निम्नलिखित में से एक शब्द सर्वनाम है
 (a) वक्ष (b) शेर
 (c) पुस्तक (d) तुम
- Q.89** 'गोबरगणेश' का अर्थ है
 (a) गोबर से बने गणेश (b) असुन्दर
 (c) गणेश की बेढंगी रचना (d) मूर्ख
- Q.90** जो हर समय दूसरों की बुराइयाँ खोजता हो
 (a) सर्वनिन्दक (b) परनिन्दक
 (c) आलोचक (d) छिद्रान्वेषी
- Q.91** 'प्रत्येक' शब्द का शुद्ध सन्धि विच्छेद है
 (a) प्रत्ये + क (b) प्रति + एक
 (c) प्र + त्येक (d) प्रत्य + इक
- Q.92** 'मुख्यपष्ठ' शब्द का प्रयोग किया जाता है
 (a) मुंह और पीठ के लिए।
 (b) सौन्दर्य प्रसाधन के लिए।
 (c) पुस्तक के पृष्ठों के लिए।
 (d) समाचार पत्र के मुख्य पष्ठ के लिए।
- Q.93** 'हरिश्चन्द्र होना' का सही अर्थ है
 (a) बलिदानी होना (b) साहसी होना
 (c) सत्यवादी होना (d) यशस्वी होना
- Q.94** 'भूख' शब्द किस प्रकार की संज्ञा है?
 (a) भाव वाचक (b) समूह वाचक
 (c) जाति वाचक (d) व्यक्ति वाचक
- Q.95** 'शाखाम ग' का अर्थ है
 (a) पक्षी (b) वानर
 (c) हरिण (d) कोयल
- Q.96** 'सामिष' का विलोम शब्द है
 (a) मांसाहारी (b) शाकाहारी
 (c) निरामिष (d) मिष्ठान्न प्रिय

Q.97 शुद्ध वाक्य निर्देशित कीजिए।

- (a) यह रुमाल अच्छी है।
- (b) पटना में दही बहुत खट्टी है।
- (c) कई हाथियाँ जा रही है।
- (d) उसका मकान अच्छा है।

Q.98 वह शब्दयुग्म जिसमें पुनरुक्ति दोष नहीं है

- (a) काला कोयला (b) गर्म आग
- (c) ठण्डी बर्फ (d) गर्म हवा

Q.99 'गड़े मुर्दे उखाड़ना' का सही अर्थ है

- (a) मुर्दों का व्यापार करना
- (b) कब्र खोदना
- (c) पुरानी विस्मृत बातों की चर्चा करना
- (d) पुरातात्विक उत्खनन कार्य

Q.100 'पानी फेर देना' का तात्पर्य है

- (a) किसी के ऊपर पानी डाल देना
- (b) पानी की धार से चारों ओर घेरा बनाना
- (c) किया-कराया नष्ट कर देना
- (d) पानी के इर्द-गिर्द घूमना

■■■■

उत्तरमाला | सामान्य हिन्दी (वर्ष 2004)

- | | | | | | | |
|---------|---------|---------|---------|---------|---------|----------|
| 1. (d) | 16. (d) | 31. (d) | 46. (b) | 61. (a) | 76. (a) | 91. (b) |
| 2. (c) | 17. (a) | 32. (c) | 47. (d) | 62. (a) | 77. (b) | 92. (d) |
| 3. (d) | 18. (a) | 33. (c) | 48. (a) | 63. (c) | 78. (d) | 93. (c) |
| 4. (c) | 19. (d) | 34. (b) | 49. (a) | 64. (a) | 79. (a) | 94. (a) |
| 5. (c) | 20. (a) | 35. (c) | 50. (d) | 65. (b) | 80. (c) | 95. (b) |
| 6. (c) | 21. (d) | 36. (c) | 51. (b) | 66. (d) | 81. (d) | 96. (c) |
| 7. (b) | 22. (c) | 37. (d) | 52. (c) | 67. (d) | 82. (d) | 97. (d) |
| 8. (d) | 23. (*) | 38. (b) | 53. (b) | 68. (d) | 83. (b) | 98. (d) |
| 9. (a) | 24. (b) | 39. (b) | 54. (a) | 69. (c) | 84. (d) | 99. (c) |
| 10. (c) | 25. (c) | 40. (a) | 55. (a) | 70. (c) | 85. (c) | 100. (c) |
| 11. (c) | 26. (b) | 41. (d) | 56. (d) | 71. (d) | 86. (c) | |
| 12. (c) | 27. (a) | 42. (d) | 57. (a) | 72. (d) | 87. (d) | |
| 13. (b) | 28. (b) | 43. (b) | 58. (b) | 73. (d) | 88. (d) | |
| 14. (a) | 29. (a) | 44. (d) | 59. (d) | 74. (a) | 89. (d) | |
| 15. (b) | 30. (c) | 45. (c) | 60. (b) | 75. (c) | 90. (d) | |

●●●●

व्याख्या | सामान्य हिन्दी (वर्ष 2004)

1. (d) 'एक तो करेला दूजे नीम चढ़ा' का अर्थ है— किसी दुर्जन के साहचर्य से दुष्ट व्यक्ति की दुष्टता में और अधिक वृद्धि।
अतः विकल्प (d) सही है।
2. (c) 'गंगा गये गंगा दास, जमुना गये जमुना दास' का अर्थ है।
अवसरवादी होना।
अतः विकल्प (c) सही है।
3. (d) शुद्ध शब्द: संन्यासी
अतः विकल्प (d) सही है।
4. (c) शुद्ध शब्द: उपर्युक्त
अतः विकल्प (c) सही है।
5. (c) शब्द 'मनमानी' पुल्लिङ्ग नहीं है।
अतः विकल्प (c) सही है।
6. (c) उर्दू को उत्तर-प्रदेश में दूसरी राजभाषा के रूप में मान्यता है।
अतः विकल्प (c) सही है।
7. (b) 'एक अनार सौ बीमार' एक कहावत है।
अतः विकल्प (b) सही है।
8. (d) नीरज और अम्बुज 'कमल' के पर्यायवाची हैं।
अतः विकल्प (d) सही है।
10. (c) 'इन दोनों कमरों के बीच में एक दीवार है।'
अतः विकल्प (c) सही है।
11. (c) मेरी सौभाग्याकांक्षिणी कन्या का विवाह होने जा रहा है।
अतः विकल्प (c) सही है।
12. (c) पवन, मारुत, समीर शब्द 'वायु' के पर्यायवाची हैं जबकि अनल का अर्थ है 'अग्नि'।
अतः विकल्प (c) सही है।
13. (b) 'संयोग' शब्द का विलामे है— 'वियोग'
अतः विकल्प (b) सही है।
14. (a) 'पत्थर' का तत्सम शब्द है— 'प्रस्तर'
अतः विकल्प (c) सही है।
16. (d) 'जागति' का विलोम है— 'सुषुप्ति'
अतः विकल्प (d) सही है।
17. (a) शुद्ध शब्द: प्रौद्योगिकी
अतः विकल्प (a) सही है।
19. (d) 'नाच न जाने आँगन टेढ़ा' का अर्थ है— अपनी अयोग्यता छिपाने के लिए साधन को दोष देना।
अतः विकल्प (d) सही है।
20. (a) रंगा सियार का अर्थ है— 'धूर्त आदमी'
अतः विकल्प (a) सही है।
21. (d) हिमकर (चन्द्रमा) का विलोम है दिनकर (सूर्य)।
अतः विकल्प (d) सही है।
22. (c) इटावा ब्रज भावा का क्षेत्र है। अतः भोजपुरी इटावा जिले में नहीं बोली जाती है।
23. (*) 'च' वर्ग च, छ, ज, झ, ञ
'क' वर्ग क, ख, ग, घ, ङ
'त' वर्ग त, थ, द, ध, न
ऊष्म श, ष, स, ह
24. (b) भोजपुरी बोली का प्रसार भारत के बाहर सूरीनाम, फिजी, मारिशस, गयाना, त्रिनिडाड में है। इस दृष्टि से भोजपुरी अंतर्राष्ट्रीय महत्व की बोली है।
अतः विकल्प (b) सही है।
25. (c) अयोध्या सिंह 'हरिऔध' खड़ी बोली के कवि है।
अतः विकल्प (c) सही है।
26. (b) 'आई' प्रत्यय 'खाई' शब्द में नहीं लगा है।
अतः विकल्प (b) सही है।
28. (b) 'सीमा, जाओ बाहर खेलो' एक आज्ञावाचक वाक्य है।
अतः विकल्प (b) सही है।
29. (a) जो कठिनाई से समझ में आये— 'दुर्बोध'
अतः विकल्प (a) सही है।
30. (c) उपसर्ग मूल शब्द शब्द
सु + कर्म = सुकर्म
सु + गम = सुगम
सु + मन = सुमन
अतः शब्द 'सुअर' में 'सु' उपसर्ग नहीं है।

UPPSC-AE

Combined State Engineering
Services Examination

Section-C

Civil Engineering



Topicwise
General Studies

2007(I)

- Q.1** It is believed that deposits of cholesterol in the body are responsible for:
(a) tooth decay (b) liver disorders
(c) heart disorders (d) cancer
- Q.2** Which one of the following chemicals is used to preserve food material?
(a) Caustic soda (b) Sodium benzoate
(c) Sodium chloride (d) Sulphuric acid
- Q.3** Which one of the following diseases is not caused by virus?
(a) polio (b) small pox
(c) tuberculosis (d) AIDS
- Q.4** The depth of oceans is usually measured in:
(a) feet (b) fathoms
(c) metres (d) nautical miles
- Q.5** 'Jarvik-7' is:
(a) electronic leg (b) pace maker
(c) artificial heart (d) artificial eye
- Q.6** Which one of the following statements is not correct?
(a) Iron sinks in water
(b) Iron floats in mercury
(c) Mercury floats in water
(d) Wood floats in water
- Q.7** Ozone absorbs solar radiation in the range of
(a) 240 to 280 μm (b) 280 to 320 μm
(c) 320 to 400 μm (d) 400 to 700 μm
- Q.8** Which one of the following Vitamins helps in the process of blood clotting?
(a) Vitamin C (b) Vitamin D
(c) Vitamin E (d) Vitamin K
- Q.9** Which one of the following forms an irreversible complex with haemoglobin of the blood?
(a) Carbon-dioxide
(b) Pure Nitrogen gas
(c) Carbon monoxide
(d) Mixture of Carbon-dioxide and Helium
- Q.10** Which one of the following expresses error in computer data?
(a) chip (b) byte
(c) bug (d) bit
- Q.11** India won the legal battle against the USA in the patenting of the medicinal plant of:
(a) Neem (b) Haldi
(c) Tulsi (d) Pudina
- Q.12** Which one of the following is responsible for the colour of the skin?
(a) Enzymes (b) Epidermis
(c) Hormones (d) Melanin
- Q.13** Energy required for the process of food manufacture in green plants comes from:
(a) oxygen (b) carbon dioxide
(c) glucose (d) sunlight
- Q.14** Which one of the following statements is not true?
(a) Apple was introduced in India from outside
(b) Apple is rich in roughage
(c) Apple has high content of calcium
(d) Apple has high content of iron
- Q.15** The vaccine for polio was first prepared by:
(a) Paul Ehrlich (b) Joseph Lister
(c) Louis Pasteur (d) Jonas Salk

2007(II)

- Q.16** Cyanide poisoning causes immediate death as it directly affects
(a) perspiration
(b) cellular respiration

- (c) blood circulation
- (d) digestion

Q.17 The Apollo Mission of NASA could map only 25% of the total Moon surface. India's Chandrayan-I mapped what percentage of Moon surface?

- (a) 75% (b) 80%
- (c) 90% (d) 95%

Q.18 Waves transmit from one place to another

- (a) Mass (b) Amplitude
- (c) Wavelength (d) Energy

Q.19 Lanolin - a type of wax used for making ointments is obtained from

- (a) Palm tree (b) Rubber tree
- (c) Wool (d) Bees

Q.20 Kinetic energy of a body is

- (a) a vector quantity
- (b) a scalar quantity
- (c) proportional to its weight
- (d) proportional to its momentum

Q.21 Absolute zero may be regarded as that temperature at which

- (a) water freezes
- (b) all gases become liquid
- (c) molecular motion in a gas would cease
- (d) all substances are solid

Q.22 Metals are good conductors of heat because

- (a) their atoms collide infrequently
- (b) their atoms are relatively far apart
- (c) they contain free electron
- (d) they have reflecting surfaces

Q.23 Permanent magnets are made from

- (a) Diamagnetic substances
- (b) Ferromagnetic substances
- (c) Paramagnetic substances
- (d) Dielectric substances

Q.24 Match the Indian Scientists with the disciplines they are associated with. Find your answer from the given code:

Scientists

- A. R.C. Bose
- B. Satyendra Nath Bose

C. Dr. Shambhu Nath

D. Dr. Nil Ratan Dhar

Disciplines

- 1. Chemistry
- 2. Experimental Pathology
- 3. Physics
- 4. Mathematics

Codes:

	A	B	C	D
(a)	4	3	2	1
(b)	1	2	3	4
(c)	3	4	1	2
(d)	2	1	4	3

Q.25 Fish can survive inside a frozen lake because

- (a) fish are cold blooded animals
- (b) fish can breathe when embedded in ice
- (c) fish move to the bottom of the lake where water is at 4°C
- (d) fish move to the top of the lake where water is at 4°C

Q.26 The shortest wavelength is for

- (a) γ -rays (b) X-rays
- (c) ultra-violet rays (d) microwaves

Q.27 The flying of birds is a proof of Newton's

- (a) third law of motion
- (b) second law of motion
- (c) first law of motion
- (d) both second and third law of motion

Q.28 In a Doctor's stethoscope, the sound is intensified because of

- (a) reflection of sound
- (b) resonance of sound
- (c) constructive interference
- (d) principle of superimposition of waves

Q.29 Which of the following waves/rays are used in sonography?

- (a) micro-waves (b) infrared rays
- (c) ultrasonic waves (d) sound waves

Q.30 Teflon is a/an

- (a) insecticide (b) polymer
- (c) drug (d) dye

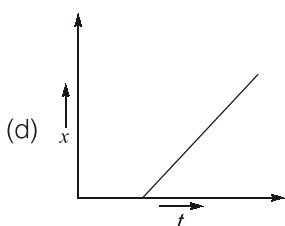
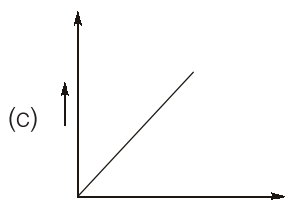
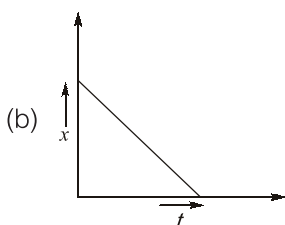
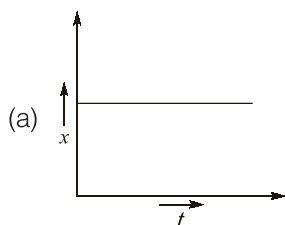
Q.31 The metal present in Haemoglobin is

- (a) Magnesium (b) Copper
- (c) Zinc (d) Iron

Q.32 Artificial light can

- (a) destroy chlorophyll
- (b) synthesise chlorophyll
- (c) bring about photosynthesis
- (d) not bring about photosynthesis

Q.33 Which of the following graphs cannot be a distance-time graph?



Q.34 In high mountain regions, bleeding through nose occurs because

- (a) the B.P. fluctuates and causes the blood vessels to break
- (b) the B.P. increases at high altitude
- (c) the pressure at high altitudes is greater than that of the plains
- (d) the pressure of blood capillaries is higher than the outside pressure

Q.35 Fat can be separated from milk in a cream separator because of

- (a) cohesive force
- (b) gravitational force
- (c) centrifugal force
- (d) centripetal force

Q.36 Materials for rainproof coats and tents owe their waterproof properties due to

- (a) viscosity
- (b) surface tension
- (c) specific gravity
- (d) elasticity

Q.37 A peeled potato chip placed in plain water becomes firm and stiff due to a process called

- (a) diffusion
- (b) osmosis
- (c) hydrolysis
- (d) hydration

Q.38 Which one of the following hormone gets triggered when a hug or kiss takes place between a mother and her child?

- (a) Insulin
- (b) Noradrenaline
- (c) Follicular stimulating hormone
- (d) Oxytocin

Q.39 A third permanent Research Station is proposed to be established in South Polar Region (Antarctica) by India. What name is proposed for it?

- (a) Maitri
- (b) Bharti
- (c) Dakshin Gangotri
- (d) Himadri

Q.40 Essential element present in Chlorophyll is

- (a) Iron
- (b) Manganese
- (c) Copper
- (d) Magnesium

Q.41 Nodules in pulses crop produce pink colour due to

- (a) Rhizobium
- (b) Azotobacter
- (c) Azospirillum
- (d) None of these

Q.42 Which among the following sugars is a constituent of nucleic acid (RNA-DNA)?

- (a) Maltose
- (b) Ribose
- (c) Fructose
- (d) Glucose

Q.43 The Moon reflects only 7% of the sunlight it receives. What percentage of sunlight received by the Earth is reflected back according to astrophysicists?

- (a) 30%
- (b) 32%
- (c) 34%
- (d) 35%

2008

Q.44 What is true with regard to 'NAG'?

1. It is India's indigenously developed third generation anti-tank missile.

2. It is capable of penetrating all known armours.
3. It has a 'fire and forget' capability and can be deployed on trucks and wheeled vehicles as well as helicopters.

Select the correct answer from the code:

Code:

- (a) 1, 2 and 3 (b) Only 1 and 2
(c) Only 2 and 3 (d) Only 1 and 3

Q.45 Which one of the following is not a space satellite?

- (a) SLV-3 (b) RS-D1
(c) IRS-1D (d) INSAT-2D

Q.46 Air-cooler is more effective in

- (a) Coastal area (b) Desert region
(c) Forest area (d) Hill region

Q.47 If the door of a refrigerator, placed in a closed room, is kept open, then the room temperature will

- (a) increase
(b) decrease
(c) remains unchanged
(d) fluctuate with time

Q.48 If we heat a piece of iron it first glows dull red, then white and finally turns to

- (a) black (b) red
(c) orange (d) blue

Q.49 The quality of diesel is measured in terms of

- (a) Cetane numbers (b) Gold numbers
(c) Octane numbers (d) None of these

Q.50 Match **List-I** with **List-II** and select the correct answer from the code given below the lists:

List I	List II
A. Brahmi	1. Antidiabetic
B. Sadabahar	2. Carminative
C. Pudina	3. Expectorant
D. Tulsi	4. Brain Tonic

Codes:

- | | A | B | C | D |
|-----|----------|----------|----------|----------|
| (a) | 1 | 2 | 3 | 4 |
| (b) | 4 | 1 | 2 | 3 |
| (c) | 3 | 2 | 1 | 4 |
| (d) | 2 | 4 | 3 | 1 |

Q.51 The fuse wire has the special characteristic of

- (a) less resistance—higher melting point
(b) high resistance—lower melting point
(c) less resistance—lower melting point
(d) high resistance—higher melting point

Q.52 In lie detection, polygraph measure which of the following activities a person answers questions, which one of the following:

- (a) Brain activity and eye motion
(b) Heart rate and respiratory rate
(c) Brain activity and heart rate
(d) Eye motion and respiratory rate

Q.53 Match **List-I** with **List-II** and select the correct answer from the code given below the lists:

List I	List II
A. Vitamin B ₁₂	1. Magnesium
B. Haemoglobin	2. Cobalt
C. Chlorophyll	3. Copper
D. Chalcopyrite	4. Iron

Codes:

- | | A | B | C | D |
|-----|----------|----------|----------|----------|
| (a) | 3 | 1 | 4 | 2 |
| (b) | 1 | 2 | 3 | 4 |
| (c) | 2 | 4 | 1 | 3 |
| (d) | 4 | 3 | 2 | 1 |

Q.54 The technology used for obtaining liquefied oxygen or liquefied hydrogen on industrial scale is called

- (a) Pyrotechnics (b) Pyrometry
(c) Hydroponics (d) Cryogenics

Q.55 A substance, which is of great value for the welfare of the new born child, is present in the mother's milk within first few days of delivery but not after that. This substance is

- (a) Calcium (b) Casein
(c) Cholesterol (d) Colostrum

Q.56 Match **List-I** with **List-II** and select the correct answer from the code given below the lists:

List I	List II
A. Cardiologist	1. Eye
B. Nephrologist	2. Urinary tract
C. Urologist	3. Heart
D. Oculist	4. Kidney

Codes:

	A	B	C	D
(a)	3	4	2	1
(b)	4	3	1	2
(c)	1	2	4	3
(d)	2	1	3	4

Q.57 The function of a dynamo is to

- (a) convert the mechanical energy into electrical energy
- (b) convert the electrical energy into mechanical energy
- (c) produce high voltage
- (d) produce low voltage

Q.58 Consider the following statements regarding ultrasonic waves:

1. These can destroy insects.
2. These can clean clothes by removing dust.
3. These can be used to treat disease.
4. These can control automatic doors.

Of these statements,

- (a) 1 and 2 are correct
- (b) 3 and 4 are correct
- (c) 1, 2 and 3 are correct
- (d) 1, 2, 3 and 4 all are correct

2011

Q.59 Assertion (A) : Apparent weight of a person standing in a lift which moves upwards with uniform acceleration is always higher than his true weight.

Reason (R) : The weight always acts downwards. Choose your answer from the following codes:

- (a) Both (A) and (R) are true and (R) is the correct explanation of (A)
- (b) Both (A) and (R) are true but (R) is not the correct explanation of (A)
- (c) (A) is true but (R) is false
- (d) (A) is false but (R) is true

Q.60 Assertion (A) : The upper surface of the wings of an aeroplane is made convex and the lower surface is made concave.

Reason (R) : The air current at the top has less velocity and thus less pressure at the bottom than at the top.

Choose your answer from the following codes:

- (a) Both (A) and (R) are true and (R) is the correct explanation of (A)
- (b) Both (A) and (R) are true but (R) is not the correct explanation of (A)
- (c) (A) is true but (R) is false
- (d) (A) is false but (R) is true

Q.61 Which of the following collisions is not perfectly inelastic?

- (a) A man boarding a moving bus
- (b) A bullet fired into a wooden block and getting embedded in it
- (c) The capture of neutron by a nucleus
- (d) A player kicking a football

Q.62 Satellite is kept moving in its orbit around the earth, it does so due to

- (a) centrifugal force
- (b) centripetal force
- (c) gravitational force
- (d) some other forces

Q.63 Two water droplets coalesce to form a large drop. In this process

- (a) energy is liberated
- (b) energy is absorbed
- (c) energy is neither liberated nor absorbed
- (d) none of the above

Q.64 Fire extinguishers contain sulphuric acid and

- (a) Calcium carbonate
- (b) Sodium bi-carbonate solution
- (c) Sodium carbonate
- (d) Sodium bicarbonate and Sodium carbonate

Q.65 An astronaut cannot hear his companion at the surface of the moon because:

- (a) produced frequencies are above the audio frequency
- (b) there is no medium for sound propagation
- (c) temperature is too low during night and too high during day
- (d) there are many craters on the moon's surface

Q.66 Two blocks of ice when pressed together join to form one block because

- (a) of heat produced during pressing
- (b) of cold produced during pressing

- (c) melting point of ice decreases with the increase of pressure
- (d) melting point of ice increases with the increase in pressure

Q.67 The walls and ceiling of an auditorium are covered with fibrous material such as glass fibre, to

- (a) beautify the auditorium
- (b) reduce the cost of construction
- (c) make the auditorium fire-proof
- (d) absorb sound and prevent echoes

Q.68 When a man cycles round the earth in a satellite, his

- (a) mass becomes zero, but weight remains constant
- (b) mass remains constant, but weight becomes zero
- (c) both mass and weight remain constant
- (d) both mass and weight become zero

Q.69 Which is the India's heaviest satellite launched by ISRO from Kouron on September 29, 2012?

- (a) INSAT-4A
- (b) GSAT-10
- (c) GSAT-12
- (d) None of these

Q.70 Which one of the following statements is not true regarding viruses?

- (a) They do not take any food
- (b) They can be seen only in an electron microscope
- (c) They grow in size
- (d) They do not subdivide

Q.71 If fats and oils are stored for a long time, their taste and smell change due to:

- (a) Oxidation
- (b) Reduction
- (c) Both of above
- (d) None of these

Q.72 Which one of the following fibres is being used these days in making aircraft?

- (a) Glass fibre
- (b) Carbon fibre
- (c) Nylon fibre
- (d) Cavler fibre

Q.73 Edible part of Ginger is

- (a) Modified root
- (b) Modified stem
- (c) Root
- (d) Stem

Q.74 Silicon at room temperature is a

- (a) perfect insulator
- (b) good conductor
- (c) semi-conductor
- (d) none of these

Q.75 Wheat germ oil is a valuable source of:

- (a) Vitamin A
- (b) Vitamin D
- (c) Vitamin E
- (d) Vitamin K

Q.76 LED is a

- (a) Light Enhancement Device
- (b) Diode that conducts electricity when light falls on it
- (c) Diode that emits light when a current is passed through it
- (d) Special device that shines when kept in dark

Q.77 Laser is a device for producing

- (a) Spontaneous radiation
- (b) Dispersed radiation
- (c) Scattered radiation
- (d) Stimulated radiation

Q.78 Which one of the following effects helps in knowing the nature of universe?

- (a) Doppler's effect
- (b) Photoelectric effect
- (c) Kepler's planetary laws
- (d) None of these

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Q.79 Renin (an enzyme) is used in which of the following industries?

- (a) Soft drink
- (b) Leather
- (c) Paper
- (d) Cheese

Q.80 The breath that we throw out contains carbon dioxide upto an extent of

- (a) 16%
- (b) 12%
- (c) 8%
- (d) 4%

Q.81 Which one of the following gases was discovered first in the chromosphere of the Sun?

- (a) Xenon
- (b) Helium
- (c) Neon
- (d) Krypton

Q.82 Which of the following is a vector quantity?

- (a) Force
- (b) Pressure
- (c) Energy
- (d) Temperature

Q.83 The red colour of tomato is due to the presence of which of the following compounds in it?

- (a) Lutein
- (b) Lycopene
- (c) Flavones
- (d) β -carotene

Answers | General Science

1. (a)	18. (d)	35. (c)	52. (b)	69. (b)	86. (c)
2. (b)	19. (c)	36. (b)	53. (c)	70. (c)	87. (b)
3. (c)	20. (d)	37. (b)	54. (d)	71. (a)	88. (d)
4. (b)	21. (c)	38. (d)	55. (d)	72. (b)	89. (a)
5. (c)	22. (c)	39. (b)	56. (a)	73. (b)	90. (b)
6. (c)	23. (b)	40. (d)	57. (a)	74. (c)	91. (d)
7. (a)	24. (a)	41. (d)	58. (d)	75. (c)	92. (a)
8. (d)	25. (c)	42. (b)	59. (b)	76. (c)	93. (c)
9. (c)	26. (a)	43. (a)	60. (c)	77. (d)	94. (b)
10. (c)	27. (a)	44. (a)	61. (d)	78. (c)	95. (d)
11. (a)	28. (a)	45. (a)	62. (b)	79. (d)	96. (c)
12. (d)	29. (c)	46. (b)	63. (a)	80. (d)	97. (b)
13. (d)	30. (b)	47. (a)	64. (b)	81. (b)	98. (c)
14. (b)	31. (d)	48. (d)	65. (b)	82. (a)	
15. (d)	32. (c)	49. (a)	66. (c)	83. (b)	
16. (b)	33. (b)	50. (b)	67. (d)	84. (b)	
17. (d)	34. (d)	51. (b)	68. (b)	85. (a)	

Explanations | General Science

1. (c)

Cholesterol is a type of Fat (lipid) made by our body. It is essential for good health and is found in every cell in our body however, having a high level of certain type of Cholesterol in our blood (hyper cholesteralaemia) can increase. Possibility of cardiovascular disease, such as heart disease and stroke. High Cholesterol fatty deposit (knows plaques) to built up inside our blood vessels. In time, the blood vessels supplying our heart may become so narrow they can't deliver oxygen to our heart. Muscle, particularly when we are exerting ourself. This can cause chest pain. If a fatty plaque breaks off it may cause a blood clot that can block blood flow to our heart (heart attack) or if the same process occurs in your brain it may cause a stroke.

2. (b)

Sodium benzoate and other benzoates are the principle organic chemicals used as food preservatives. The use of benzoates in certain products in prescribed quantity (usually not exceeding 0.1 percent) is permitted in most countries. Sometimes, sodium chloride is also used as food preservative as preservation of meat, fishes, pickles etc.

3. (c)

Tuberculosis, commonly known as TB, is a bacterial infection that can spread through the lymph nodes and blood stream to any organ in our body. It is most after found in the lungs. Most people who are exposed to TB never develop symptoms because the bacteria can live in an inactive form in the body. But if the immune

system weakens, such as in people with HIV or elderly adults. TB bacteria can become active in their active state, it can cause death of tissue in the organs they infect. Active TB disease can be fatal if left untreated.

4. (b)

The depth of oceans is measured in fathom. One fathom is equals to 6 feet or 1.8288 meters, is a unit of length in the old imperial and U.S. Customary systems used especially for measuring the depth of water.

5. (c)

The Jarvik 7 is a artificial heart probably best known as artificial heart device. It was designed by Dr. Jarvik, to function like the Natural heart.

6. (c)

Mercury has higher density than Iron, so Iron floats in mercury.

8. (d)

Vitamin K is a necessary component of the body's ability to clot blood, without its function, a small cut could result in uncontrolled bleeding. In addition, vitamin K has an important role in the formation of bone. Higher level of Vitamin K means more calcium in the bone, increased bone density, and less risk of fracture.

9. (c)

Carbon monoxide makes carboxy-haemo-globin when reactions with haemoglobin. The process is irreversible.

12. (d)

Melanin is a pigment found in skin of human responsible for colour. In African race of people it is very high where as in European race people it is absent or very less in quantity, the high quantity of melanin protected the skin from rays so decrease the threat of skin cancer. Where as European people or white people are susceptible to skin cancer because they have very less melanin in skin.

13. (d)

Energy required for the process of food manufacturing in green plants (in Photosynthesis) comes from sunlight. Plants in presence of water, chlorophyll and sunlight make food and the process is called photosynthesis.

14. (b)

Apple was introduced in India from middle east countries.

15. (d)

- Two polio vaccines are used throughout the world to combat poliomyelitis (or Polio). The first was developed by Jonas Salk and first tested in 1952. It consists of an injected dose of inactivated (dead) polio virus.
- Another, oral (or Modern) Polio vaccine was developed by Albert Sabin using attenuated polio virus. Human trials of Sabin's vaccine began in 1957.

16. (b)

The cyanide ion (CN^-) halts cellular respiration by inhibiting an enzyme in the mitochondria called cytochrome C oxidase.

Cyanide poisoning is a form of histotoxic hypoxia because the cells of organism are unable to use oxygen, primarily through the inhibition of cytochrome C oxidase.

Acute hydrogen cyanide poisoning can result from inhalation of fumes from burning polymer products that use nitrites in their production, such as wool, silk, polyurethanes or vinyl.

17. (d)

Chandrayaan-1 was the India's lunar mission launched on 22nd October 2008 from PSLV-C11 by ISRO. It was operated by NASA.

Chandrayaan-1 operated for 312 days as opposed to the intended two years but mission achieved 95 percent of its planned objectives including mapping over 95 % of the lunar surface with the M^3 instrument (Moon Mineralogy Mapper). M^3 is an imaging spectrometer that has provided the first-high resolution spatial and spectral map of the entire lunar surface, revealing the minerals of which it is made.