

FEDERAL PUBLIC SERVICE COMMISSION



COMPETITIVE EXAMINATION FOR RECRUITMENT TO POSTS IN BS-17 UNDER THE FEDERAL GOVERNMENT, 2011 GENERAL KNOWLEDGE, PAPER-I (EVERYDAY SCIENCE)

Roll Number

TIME ALLOWED:	(PART-I MCQs)	80 MINUTES	MAXIMUM MARKS: 50
THREE HOURS	(PART-II)	100 MINUTES	MAXIMUM MARKS: 50
NOTE: (i) First attempt PART-I (MCQs) on separate Answer Sheet which shall be taken back after 80 minutes.			
(ii) Overwriting/cutting of the options/answers will not be given credit.			

(PART-I MCQs) (COMPULSORY)

Q.1. Select the best option/answer and fill in the **appropriate box** on the **answer sheet**. **(1 x 50 = 50)**

- (1) The planet of the solar system which has maximum number of Moon is:
(a) Jupiter (b) Venus (c) Saturn (d) Uranus
(e) None of these.
- (2) Sun is a:
(a) Planet (b) Comet (c) Satellite (d) Aurora
(e) None of these.
- (3) The age of the solar system is:
(a) 4.5 billion years (b) 5.5 billion years
(c) 6.5 billion years (d) 7.5 billion years (e) None of these.
- (4) A unit of length equal to the average distance between the Earth and Sun is called:
(a) Light year (b) Astronomical unit (c) Parsec (d) Parallax
(e) None of these.
- (5) An eclipse of the Sun occurs when:
(a) The Moon is between the Sun and the Earth (b) The Sun is between the Earth and the Moon
(c) The Earth is between the Sun and the Moon (d) The Earth casts its shadow on the Moon
(e) None of these.
- (6) The ozone layer protects the Earth from rays sent down by the Sun:
(a) Ultraviolet rays (b) Infrared rays (c) Gamma rays
(d) Radioactive rays (e) None of these.
- (7) The ozone layer is present about 30 miles (50 Km) in atmosphere above the Earth. The stratum (layer) of atmosphere in which ozone layer lies is called as:
(a) Exosphere (b) Mesosphere (c) Stratosphere
(d) Ionosphere (e) Troposphere
- (8) Which rocks are formed by the alteration of pre-existing rocks by great heat or pressure?
(a) Igneous rocks (b) Sedimentary rocks (c) Metamorphic rocks
(d) Acid rocks (e) Basic rocks.
- (9) The most abundant natural Iron Oxides are:
(a) Magnetite and Pyrite (b) Magnetite and Bauxite (c) Hematite and Pyrite
(d) Hematite and Magnetite (e) Hematite and Bauxite
- (10) The two most abundant elements in sea water are:
(a) Sodium and Potassium (b) Sodium and Calcium (c) Sodium and Chlorine
(d) Chlorine and Iodine (e) Magnesium and Sulphur
- (11) An electric current can produce:
(a) Chemical effect (b) Magnetic effect (c) Heating effect
(d) All of these three (e) None of these.

GENERAL KNOWLEDGE, PAPER-I (EVERYDAY SCIENCE)

- (12) The unit of home electricity energy consumption is:
(a) Watt hour (b) Kilowatt hour (c) Joule hour
(d) Kilojoule hour (e) None of these.
- (13) The magnet always points in the same direction, if allowed to move freely i.e. towards North and South poles, because of:
(a) Gravitational field (b) A lot of metal deposits on North and South Poles
(c) Due to attraction of North Pole and repulsion of Western Pole
(d) Earth is a huge magnet (e) None of these.
- (14) When sound is reflected from floor, ceiling or a wall, it mixes with the original sound and changes its complexion, it is called as:
(a) Sound (b) Echo (c) Reverberation (d) Noise (e) None of these.
- (15) The speed of sound in dry air at 20 °C is about:
(a) 130 meters per second (b) 230 meters per second (c) 330 meters per second
(d) 430 meters per second (e) None of these.
- (16) The speed of light in vacuum is about:
(a) 300 Million meters per second (b) 300 Million meters per hour
(c) 300 Million kilometres per second (d) 300 Million kilometres per hour (e) None of these.
- (17) The time, light takes from the Sun to reach Earth is:
(a) 8 minutes (b) 25 minutes (c) 45 minutes (d) 60 minutes (e) None of these.
- (18) Light from the Sun travels a distance before it reaches the Earth :
(a) 50 million Km (b) 100 million Km (c) 150 million Km
(d) 200 million Km (e) None of these.
- (19) The most suitable thermometer for measuring the boiling point of water is:
(a) Mercury thermometer (b) Alcohol thermometer (c) Bimetallic thermometer
(d) Liquid crystal thermometer (e) None of these.
- (20) The density of water is greatest at:
(a) -32 °C (b) 0 °C (c) 4 °C (d) 100 °C (e) None of these.
- (21) Which one of the following statements is true?
(a) Gases do not conduct heat (b) The best conductors are non-metals
(c) Conduction currents occur only in liquids (d) A vacuum can not conduct heat
(e) None of the statements is true.
- (22) Ice can be changed to water by:
(a) Adding more water molecules (b) Changing the motion of the water molecules
(c) Rearranging the atoms in water molecules (d) Destroying the atoms in water molecules
(e) None of these.
- (23) The building blocks of elements are called:
(a) Atoms (b) Molecules (c) Compounds (d) Isotopes (e) None of these.
- (24) Boiling of an egg is a change which is:
(a) Physical (b) Chemical (c) Physiological (d) Morphological
(e) None of these.
- (25) The temperature of liquid Nitrogen is:
(a) -32 °C (b) -80 °C (c) -100 °C (d) -196 °C (e) None of these.
- (26) Which one of the following is an alkali?
(a) Water (b) Vinegar (c) Lemon juice (d) Slaked lime
(e) None of these.
- (27) If an alkali is slowly added to an acidic solution, the pH of the acidic solution will:
(a) Increase (b) Decrease (c) Increase to 7 and then decrease
(d) Decrease to 7 and then increase (e) Will remain same.

GENERAL KNOWLEDGE, PAPER-I (EVERYDAY SCIENCE)

- (28) The usual raw material for ceramics, generally found beneath the top soil is?
(a) Sand (b) Silt (c) Clay (d) Plaster of Paris (e) Melamine.
- (29) Polyamides are synthetic polymers commonly known as:
(a) Synthetic rubber (b) Nylon (c) Cellulose (d) Protein (e) None of these.
- (30) Telephone was invented in 1876 in America by:
(a) Marconi (b) Galileo (c) John Beard (d) Edison (e) Graham Bell.
- (31) Information can be sent over long distances in the form of:
(a) Electrical signals through wires (b) Light signals through optical fibres
(c) Radio waves through air (d) Any combination of these three (e) None of these.
- (32) Information can be stored in:
(a) Audio and video cassettes (b) Floppy and compact discs (c) Hard disks
(d) Laser and optical disks (e) All of these four.
- (33) Computers can:
(a) Add and subtract information only (b) Add, subtract and sort information only
(c) Add, subtract, sort and classify information (d) Add and subtract but cannot sort information
(e) Add, subtract and sort but cannot classify information.
- (34) IBM stands for:
(a) International Business Machines (b) International Big Machines
(c) Interrelated Business Machines (d) Interrelated Big Machines (e) None of these.
- (35) Chemicals used to kill weeds are called as:
(a) Insecticides (b) Fungicides (c) Herbicides
(d) Fumigants (e) None of these.
- (36) The cytoplasm consists of several types of structures, which are called:
(a) Protoplasm (b) Nucleus (c) Cytochromes
(d) Organelles (e) None of these.
- (37) The structure of DNA was elaborated by Watson and Crick in:
(a) 1909 (b) 1923 (c) 1945 (d) 1953
(e) None of these.
- (38) In a DNA molecule, the rule for base pairing is:
(a) Adenine always bound with thymine and cytosine with guanine
(b) Adenine always bound with cytosine and thymine with guanine
(c) Adenine always bound with guanine and cytosine with thymine
(d) Adenine always bound with uracil and cytosine with guanine
(e) None of these.
- (39) Man belongs to the family:
(a) Felidae (b) Hominidae (c) Mammalia (d) Primataceae (e) None of these.
- (40) Deficiency of vitamin C in the human body causes a deficiency disease called:
(a) Beriberi (b) Night blindness (c) Rickets (d) Scurvy (e) None of these.
- (41) To measure the specific gravity of milk, the instrument used is:
(a) Hygrometer (b) Barometer (c) Lactometer (d) Hydrometer (e) None of these.
- (42) One of the fundamental characteristics of living organisms is:
(a) Photosynthesis (b) Digestion (c) Excretion (d) Metabolism (e) None of these.
- (43) Plants growing on other plants are called as:
(a) Saprophytes (b) Parasites (c) Epiphytes (d) Pathogens (e) None of these.
- (44) As per eating habit, squirrels are:
(a) Frugivorous (b) Herbivorous (c) Carnivorous (d) Omnivorous
(e) Insectivorous.

GENERAL KNOWLEDGE, PAPER-I (EVERYDAY SCIENCE)

- (45) Water loss from leaves through stomata is called as:
(a) Evaporation (b) Transpiration (c) Evapo-transpiration (d) Respiration
(e) None of these.
- (46) The study of how plants and animals interact with one another and with the non-living environment is called as:
(a) Ecosystem (b) Sociology (c) Ecology (d) Habitat (e) None of these.
- (47) The number of bones in human body is:
(a) 200 (b) 202 (c) 204 (d) 206 (e) None of these.
- (48) Nervous system in human body consists of:
(a) Brain and spinal cord (b) Brain and nerves (c) Spinal cord and nerves
(d) Brain, spinal cord and nerves (e) None of these.
- (49) In human eye, the light sensitive layer made of specialized nerve cells, the rods and cones is called as:
(a) The pupil (b) The cornea (c) The sclera (d) The iris (e) The retina.
- (50) Erythrocytes are also called as:
(a) Red blood cells (b) White blood cells (c) Platelets
(d) Plasma (e) None of these.

PART-II

NOTE: (i) **PART-II** is to be attempted on separate Answer Book.
(ii) **Attempt ONLY FIVE questions from PART-II. All questions carry EQUAL marks.**
(iii) **Extra attempt of any question or any part of the attempted question will not be considered.**

- Q.2.** Write short note on the following Muslim scientists by giving their exact life span and contribution to the field of science:- (5 x 2 = 10)
(a) Jabar-bin-Hayan (b) Bu Ali Sina
- Q.3.** Differentiate between any **FIVE** of the following pairs:- (5 x 2 = 10)
(a) Typhoons and Tornadoes (b) Microscope and Telescope (c) Ultrasonics and Infrasonics
(d) Hard water and Heavy water (e) Isotopes and Isomers (f) Antibodies and Antibiotics
(g) Antigen and Vaccine
- Q.4.** (a) What is a galaxy? The Earth belongs to which galaxy? (1+1 = 2)
(b) Briefly describe what is big bang theory. (4)
(c) Do you think that Pluto is still ninth planet of our solar system? If yes, how and if not why? (1+3)
- Q.5.** (a) Basically how many forms of energy are there? Also name these. (1+1 = 2)
(b) Enlist different types of energy. (4)
(c) Why are scientists trying to find alternate energy sources? (2)
(d) What is a renewable energy source? Quote three examples of renewable energy sources. (2)
- Q.6.** Is plastic a natural or an artificial polymer? Describe various types of plastics and their uses. (10)
- Q.7.** (a) What do the following abbreviations stand for:
(i) LAN (ii) HTTP (iii) HTML (iv) PDF (v) URL (1 x 5 = 5)
(b) Differentiate between natural and artificial satellites. For what purpose artificial satellites are used? (5)
- Q.8.** (a) What is the main function of: (1 x 5 = 5)
(i) Ribosome (ii) Mitochondria (iii) Lysosomes (iv) Chloroplasts
(v) Golgi apparatus
(b) Give habitats of following animals: (1 x 5 = 5)
(i) Rattle snake (ii) Ostrich (iii) Platypus (iv) Rhinoceros
(v) Chimpanzee.
- Q.9.** Write short notes on the following:- (2 x 5 = 10)
(a) Nucleic acids (b) Fertilizers (c) Semiconductors (d) Microwave oven (e) Internet

FEDERAL PUBLIC SERVICE COMMISSION



COMPETITIVE EXAMINATION FOR RECRUITMENT TO POSTS IN BS-17 UNDER THE FEDERAL GOVERNMENT, 2012 GENERAL KNOWLEDGE, PAPER-I (EVERYDAY SCIENCE)

Roll Number

TIME ALLOWED:	(PART-I MCQs)	80 MINUTES	MAXIMUM MARKS: 50
THREE HOURS	(PART-II)	100 MINUTES	MAXIMUM MARKS: 50
NOTE: (i) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q. Paper. (ii) Overwriting/cutting of the options/answers will not be given credit.			

PART-II

NOTE: (i) PART-II is to be attempted on separate Answer Book.
(ii) Attempt ONLY FIVE questions from PART-II. All questions carry EQUAL marks.
(iii) Extra attempt of any question or any part of the attempted question will not be considered.

- Q. 2. Write briefly about two or more major achievements of each of the following two famous Muslim scientists: 5x 2=10
- (a) Abu Abdullah Mohammad Bin Musa Al Khwarizmi
- (b) Abu Ali Al Hassan ibn Al Hassan Al Haytham
- Q. 3. (a) List four or more physical characteristics of the Earth. (05)
(b) Briefly explain how Seasons and Ocean Tides are produced on the Earth? (05)
- Q. 4. (a) Very briefly explain the difference between Earthquakes, Volcanic eruptions, Floods and Tsunamis. (05)
(b) Briefly explain the difference between Sedimentary and Metamorphic rocks. (05)
- Q. 5. (a) Very briefly explain the difference between an Insulator, a Conductor, a Semiconductor and a Superconductor. (05)
(b) Briefly explain the difference between a Laser and a Photovoltaic Cell. (05)
- Q. 6. (a) Briefly explain the difference between an Antibiotic, an Antiviral Drug, a Pesticide and a Vaccine. (05)
(b) List any two of the three things that the MMR vaccine protects against. List any two other vaccines given to children. (05)
- Q. 7. (a) Briefly explain how Photosynthesis works. (05)
(b) Briefly explain the Nitrogen Cycle in nature. (05)
- Q. 8. (a) Differentiate between the following: (05)
Deoxyribonucleic Acids (DNA)
Messenger Ribonucleic Acids (mRNA)
Proteins
(b) Explain how DNA, mRNA and Proteins are interrelated to each other. (05)
- Q. 9. (a) Explain what is meant by a balanced diet? (05)
(b) Give the major function of the following micronutrients: (05)
Vitamin A
Vitamin C
Iron
Calcium
Iodine



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GENERAL KNOWLEDGE, PAPER-I
(EVERYDAY SCIENCE)

Roll Number

TIME ALLOWED:	(PART-I MCQs) 80 MINUTES	MAXIMUM MARKS: 50
THREE HOURS	(PART-II) 100 MINUTES	MAXIMUM MARKS: 50
NOTE: (i) First attempt PART-I (MCQs) on separate OMR Answer Sheet which shall be taken back after 80 minutes. (ii) Overwriting/cutting of the options/answers will not be given credit.		

PART-I ((MCQs)(COMPULSORY)

Q.1. (i) Select the best option/answer and fill in the appropriate Circle ● on the OMR Answer Sheet. (50x1=50)
(ii) Answers given anywhere, other than OMR Answer Sheet, shall not be considered.

1. Who proposed the concept "All motion is relative" ?
(a) Albert Einstein (b) John Kepler (c) Galileo Galilei (d) None of these
2. The field of specialization of famous Muslim scientist Abu Usman Aljahiz was :
(a) Botany (b) Zoology (c) Astronomy (d) None of these
3. Albatros is:
(a) A sea bird (b) A beetle (c) A fruit (d) None of these
4. The sunlight can reach a depth of ----- meters in the ocean :
(a) 100 (b) 80 (c) 120 (d) None of these
5. The biggest planet in our solar system is:
(a) Venus (b) Pluto (c) Jupiter (d) None of these
6. The biggest species of the cat family is:
(a) Tiger (b) Lion (c) Leopard (d) None of these
7. Which group of animals has heterogametic females?
(a) Domestic fowl (b) Earthworm (c) Rabbit (d) None of these
8. The dominant phase of life cycle in these organisms is haploid:
(a) Mosses (b) Bacteria (c) Protozoa (d) None of these
9. The atmosphere of moon consists of:
(a) 90% Hydrogen, 10% Nitrogen (b) 80% Nitrogen, 20% Hydrogen (c) 60% Nitrogen, 40% inert gases (d) None of these
10. The chemical name of quartz is:
(a) Silicon Dioxide (b) Stannous oxide (c) Aluminium Oxide (d) None of these
11. Which month of a calendar year can lack a new moon?
(a) December (b) February (c) May (d) None of these
12. Deuterium differs from hydrogen in having:
(a) Different atomic number but same atomic weight (b) Different atomic number and different atomic weight
(c) Same atomic number but different atomic weight (d) None of these
13. One of the following is a water soluble vitamin:
(a) Vitamin A (b) Vitamin K (c) Vitamin D (d) None of these
14. Coulomb is the scientific unit to measure:
(a) Velocity (b) Temperature (c) Mass (d) None of these
15. Equator passes through one of these countries:
(a) Saudi Arabia (b) Italy (c) Japan (d) None of these
16. Anti Diuretic hormone is secreted by one of the following glands:
(a) Pituitary (b) Pancreas (c) Thyroid (d) None of these
17. Basha Dam is to be constructed on:
(a) River Sutlaj (b) River Jhelum (c) River Chenab (d) None of these
18. UV light falls in the category of:
(a) Ionizing Radiations (b) Non-Ionizing Radiations (c) Visible Light (d) None of these
19. The earth's ----- is divided into 15 major plates of various sizes:
(a) Mesosphere (b) Stratosphere (c) Lithosphere (d) None of these
20. One of these scientists formulated basic laws of Geometry:
(a) Pythagorus (b) Archimedes (c) Aristotle (d) None of these
21. Phosphorus is an essential component of one of the following biological molecules:
(a) Amino acids (b) Nucleic acids (c) Carbohydrates (d) None of these
22. He was the first scientist to prove that planets move around the sun:
(a) Archimedes (b) Galileo Galilei (c) John Kepler (d) None of these
23. Atom is made up of ----- different kinds of subatomic particles:
(a) Three (b) Two (c) Four (d) None of these
24. Uranium is best used as nuclear fuel in one of the following forms:
(a) U^{235} (b) U^{237} (c) U^{238} (d) None of these
25. The Alpha particles are compact clusters of:
(a) Electrons and Protons (b) Two Protons and Two Neutrons (c) Three Protons and Three Neutrons (d) None of these
26. The Beta particles are fast moving:
(a) Protons (b) Neutrons (c) Electrons (d) None of these
27. One of the following countries produces maximum energy from atomic reactors:
(a) France (b) USA (c) UK (d) None of these

EVERYDAY SCIENCE GENERAL KNOWLEDGE, PAPER-I

- 28. The unit to measure the quantity of Ozone in the atmosphere is:
(a) Dobson (b) Dalton (c) Coulomb (d) None of these
- 29. The severity of 2005 earthquake of Pakistan on Richter Scale was:
(a) 6.9 (b) 7.6 (c) 7.1 (d) None of these
- 30. Geiger-Muller Counter is used to detect:
(a) Protons (b) Neutrons (c) Photons (d) None of these
- 31. Vacuum tubes have been replaced by:
(a) Conductors (b) Diodes (c) Transistors (d) None of these
- 32. Dacron is:
(a) Polyethylene (b) Epoxy (c) Polyamide (d) None of these
- 33. It is a secondary plant nutrient:
(a) Nitrogen (b) Phosphorus (c) Sulphur (d) None of these
- 34. An area of microbiology that is concerned with the occurrence of disease in human population is:
(a) Immunology (b) Parasitology (c) Epidemiology (d) None of these
- 35. The number of electrons of a neutral atom is automatically known if one knows the:
(a) Atomic number (b) Atomic weight (c) Number of orbitals (d) None of these
- 36. Which of the following is not an enzyme?
(a) Chymotrypsin (b) Secretin (c) Pepsin (d) None of these
- 37. It is impossible for a type O⁺ baby to have a type _____ mother.
(a) AB⁻ (b) O⁻ (c) O⁺ (d) None of these
- 38. Serum is blood plasma minus its:
(a) Calcium ions (b) Clotting proteins (c) Globulins (d) None of these
- 39. The autonomic nervous system innervates all of these except:
(a) Cardiac muscles (b) Skeletal muscles (c) Smooth muscles (d) None of these
- 40. The damage to the _____ nerve could result in the defect of the eye movement:
(a) Optic (b) Trigeminal (c) Abducens (d) None of these
- 41. Which of these is not a region of the spinal cord?
(a) Thoracic (b) Pelvic (c) Lumbar (d) None of these
- 42. The shape of the external ear is due to:
(a) Elastic cartilage (b) Fibrocartilage (c) Articular cartilage (d) None of these
- 43. The external surface of the stomach is covered by:
(a) Mucosa (b) Serosa (c) Parietal peritoneum (d) None of these
- 44. Which of the following is not a human organ system?
(a) Integumentary (b) Muscular (c) Epithelial (d) None of these
- 45. Which of the following does not vary predictably with the depth of the aquatic environment?
(a) Salinity (b) Temperature (c) Penetration by sunlight (d) None of these
- 46. The quantity of available nutrients _____ from the lower levels of the energy pyramids to the higher ones.
(a) Increases (b) Decreases (c) Remains stable (d) None of these
- 47. Which of the following is not a major subdivision of the biosphere?
(a) Hydrosphere (b) Lithosphere (c) Stratosphere (d) None of these
- 48. Vaccination is synonymous with _____ immunity.
(a) Natural active (b) Artificial passive (c) Artificial active (d) None of these
- 49. When a patient's immune system becomes reactive to a drug, this is an example of:
(a) Superinfection (b) Drug resistance (c) Allergy (d) None of these
- 50. What is the smallest unit of heredity?
(a) Chromosomes (b) Gene (c) Nucleotide (d) None of these

PART-II

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|--------------|---|
| NOTE: | (i) Part-II is to be attempted on the separate Answer Book . |
| | (ii) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q. Paper . |
| | (iii) Attempt ONLY FIVE questions from PART-II . ALL questions carry EQUAL marks . |
| | (iv) Extra attempt of any question or any part of the attempted question will not be considered. |

- Q.No.2. (a) "The flood disaster in Pakistan is caused by the follies of humans ". Comment. (05)
(b) State the message of "The Earth Hour Movement". (05)
- Q.No.3. (a) Porifera is an ancient group of animals from Cambrian period. What is the cause of their survival /success? (05)
(b) How heavy water differs from ordinary water and what is its use in the Atomic Reactor? (05)
- Q.No.4. What part do antibodies play in allergic reactions? How vaccination can be helpful in its control/ prevention? (10)
- Q.No.5. (a) Differentiate between Renewable and Non-renewable sources of energy. Give examples of each one of them. (05)
(b) Why Nuclear Energy is being preferred in developed countries and why are we lagging behind in this important source of energy? (05)
- Q.No.6. (a) What is Nanotechnology and what are its uses? (05)
(b) Briefly explain the differences between Chemotherapy and Radiotherapy. (05)
- Q.No.7. Write comprehensive notes on:
(a) LASER and their uses. (b) OPTIC FIBRES and their importance in modern telecom system. (5 each)
- Q.No.8. Write all that you know about Pesticides. How are they classified by agronomists? (10)
- Q.No.9. Write note on: (a) Biotechnology (b) Global Warming (5 each)



FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION FOR
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UNDER THE FEDERAL GOVERNMENT, 2014
GENERAL KNOWLEDGE, PAPER-I
(EVERYDAY SCIENCE)

Roll Number

TIME ALLOWED:	(PART-I MCQs)	80 MINUTES	MAXIMUM MARKS: 50
THREE HOURS	(PART-II)	100 MINUTES	MAXIMUM MARKS: 50
NOTE: (i) Part-II is to be attempted on the separate Answer Book . (ii) Attempt ONLY FIVE questions from PART-II . ALL questions carry EQUAL marks. (iii) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q. Paper . (iv) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed. (v) Extra attempt of any question or any part of the attempted question will not be considered.			

PART-II

- Q. No. 2.** Discuss the contribution of Muslim scientists in the development of Astronomy, Algebra and Trigonometry. (3, 3^{1/2}, 3^{1/2} each) (10)
- Q. No. 3.** Give brief answers to the following questions: (2 each) (10)
- (a) Why do we bring our hands close to our mouth while shouting across to someone far away?
(b) Why do we lean forward while climbing a hill?
(c) Why does a swimming pool appear less deep than it actually is?
(d) Why cannot petrol fire be extinguished by water?
(e) Why do Australians celebrate their Christmas during summer?
- Q. No. 4.** Differentiate between: (2 each) (10)
- (a) Hypoglycemia and Hyperglycemia
(b) Renewable and Non-renewable energy resources
(c) Lava and Magma (d) Mist and Fog (e) Lunar Eclipse and Solar Eclipse
- Q. No. 5.** Briefly explain the working principle of the following: (5 each) (10)
- (a) Radar (b) Microwave Oven
- Q. No. 6.** Give brief explanations for following phenomena: (2 each) (10)
- (a) While watching a cricket match we see the ball struck a moment before we hear the sound of the bat hitting the ball.
(b) A ship though made largely of steel, which is heavier than water, floats in water.
(c) The colour of the same cloth when seen in electric light appears different from the colour when seen in day light.
(d) Glass when heated cracks while metal does not.
(e) Although each eye perceives a separate image, we do not see everything double.
- Q. No. 7.** Write short NOTES on the following: (5 each) (10)
- (a) Environmental effects of Fertilizer use. (b) Global Warming.
- Q. No. 8.** Differentiate between: (2 each) (10)
- (a) Smog and Smoke (b) Radiotherapy and Chemotherapy
(c) Diastolic and Systolic blood pressure (d) Infection and Allergy
(e) Conductors and Insulators
- Q. No. 9.** Briefly explain the function of following in human body: (2^{1/2} each) (10)
- (a) Kidneys (b) Lymphatic system
(c) Thyroid gland (d) Pituitary gland



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Roll Number

GENERAL KNOWLEDGE, PAPER-I (EVERY DAY SCIENCE)

TIME ALLOWED: THREE HOURS	(PART-I MCQs)	MAXIMUM MARKS: 50
PART-I(MCQs) : MAXIMUM 80 MINUTES	(PART-II)	MAXIMUM MARKS: 50
NOTE:(i) Part-II is to be attempted on the separate Answer Book. (ii) Attempt ONLYT FIVE questions from PART-II . All questions carry EQUAL Marks (iii) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q. Paper . (iv) All the parts(if any) of each Question must be attempted at One Place instead of at different places. (v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed. (vi) Extra attempt of any question or any part of the attempted question will not be considered.		

PART-II

- Q.2.** (a) Ibn-e Batoota's famous book Rihalah is an important source of history and geography. Justify it. (5)
- (b) Albarouni is recognized more as natural scientist rather theorist. Comment. (5) (10)
- Q.3.** (a) How solar eclipse and lunar eclipse are caused? (5)
- (b) Discuss the function of kidneys in human body. (5) (10)
- Q.4.** (a) Describe briefly the principle working of two of the followings
(i) Television (ii) Microwave oven (iii) RADAR (5)
- (b) What is current status and future perspective of BIOTECHNOLOGY in Pakistan? (5) (10)
- Q.5.** (a) What do mean by night vision technology? (5)
- (b) How Energy crises can be minimized in Pakistan. (5) (10)
- Q.6.** (a) Write short note on Seismography. (5)
- (b) Differentiate between
(i) Cell and battery (ii) Smog and Smoke (5) (10)
- Q.7.** (a) What do you understand by Pollen Allergy. (5)
- (b) Write down short note on any two of the following.
(i) Antibiotics (ii) Hormones (iii) Green House effect? (5) (10)
- Q.8.** (a) Write down note on Forensic Science and Criminology. (5)
- (b) What are fertilizers? What do you understand by NPK Fertilizers? (5) (10)
- Q.9.** (a) What is Anemia? What are its symptoms and causes? (5)
- (b) Write short note on space shuttle. (5) (10)



FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION - 2016
FOR RECRUITMENT TO POSTS IN BS-17
UNDER THE FEDERAL GOVERNMENT

Roll Number

GENERAL KNOWLEDGE-I
(GENERAL SCIENCE & ABILITY)

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80
NOTE: (i) Part-II is to be attempted on the separate Answer Book.		
(ii) Attempt ONLY EIGHT questions from PART-II, selecting FIVE questions from SECTION-I and THREE questions from SECTION-II. ALL questions carry EQUAL marks.		
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.		
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.		
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.		
(vi) Extra attempt of any question or any part of the attempted question will not be considered.		

PART-II
SECTION-I

- Q. No. 2.** (a) What were the main objectives of Clean Development Mechanism? Also explain the reasons for the criticism on Koyoto Protocol by the developed countries. (5)
- (b) Differentiate between Sanitary and Industrial Landfills, also describe the land selection criteria for Landfills. (5)
- Q. No. 3.** (a) Write a short note on artificial intelligence. (5)
- (b) Write short notes on: (2½ each) (5)
- (i) Fibre Optics (ii) Global Positioning System
- Q. No. 4.** (a) What are vaccines? Classify these and discuss DNA vaccines in detail. (5)
- (b) What are causative organism and vector for dengue, enlist possible ways of prevention from dengue. (5)
- Q. No. 5.** (a) Comment, 'liver is the chief chemist in human body'. (5)
- (b) What is Cholesterol? Discuss its importance, normal blood level and dangers of elevated levels with reference to the health and disease in humans. (5)
- Q. No. 6.** (a) What do you know about the Remote Sensing Techniques? Explain resolution and write down the names of its various types? (5)
- (b) What is hydrological cycle? Discuss its importance. (5)
- Q. No. 7.** (a) What is tsunami? How the tsunamis generated and what are their characteristics? (5)
- (b) What is an earth quake? Discuss Richter Scale in this context. What was the intensity of the earth quake in Pakistan dated 26 October 2015 and where was the locus? (5)
- Q. No. 8.** (a) Explain the shape of water molecule with the help of Molecular Orbital Theory, also draw its orbital diagram. (5)
- (b) What are the gamma rays? Explain their applications. (5)
- Q. No. 9.** (a) Discuss importance of preservatives and antioxidants in food. (5)
- (b) Comment, Green House Effect is a blessing. Also discuss Enhanced Green House Effect and its relation with global warming. (5)

GENERAL KNOWLEDGE-I (GENERAL SCIENCE & ABILITY)

SECTION-II

- Q. No. 10. (a)** Define and draw the following: **(2½ each) (5)**
(i) Rightangle triangles (ii) Equilateral triangles
(b) There are nine students in a group having ages 15, 15, 16, 16, 16, 17, 17, 18, 19. Calculate *mean, medium, mode* and *range* of their ages also define the above mentioned terms: **(5)**

- Q. No. 11. (a)** A distribution company provides households to departmental stores within a 50 kilometers radius. The table below shows how far each departmental store is from the godown of the distribution company. **(5)**

Distance from the godown of the distribution company	Number of Stores
10 kilometers or less	03
11 to 20 kilometers	15
21 to 30 kilometers	26
31 to 40 kilometers	20
41 to 50 kilometers	16

- (i) How many stores does the distribution company serve?
(ii) What is the most common distance of stores from the company's godown?
(iii) How many stores are 35 Km or more from the godown?
(iv) What percentage of stores are 31 Km or more from the godown?
- (b)** Read the following carefully and answer the questions following: **(5)**
Ahmad, Ali, Akbar, Nasir and Shehbaz are students of a college having different heights and weights. Ahmad weighs thrice as much as Ali and Ali weighs 5 times as much as Akbar. Akbar weighs half as much as Nasir and Nasir weighs half as much as Shehbaz.
(i) Who is the heaviest in weight?
(ii) Who is the lightest in weight?
(iii) Shehbaz is lighter in weight than which of the two students?
(iv) Shehbaz is heavier than which of the two students?
(v) Show the descending order of weights of the students?

- Q. No. 12. (a)** Classification of blood groups is based on the presence or absence of inherited antigenic substances on the surface of red blood cells. In a survey of British population the blood group distribution among 1000 people was as follows: 300 had blood group A, 325 had blood group B, 250 had O and 125 AB. Out of this group a person was selected at random, calculate his probability of having blood group AB **(5)**

- (b)** Five friends Ahmad, Ali, Akbar, Nasir and Shehbaz went on summer vacation to five cities namely V, W, X, Y and Z by five different modes of transport, that is by bus, train, aeroplane, car and boat from point A. Akbar went to Y by car and Ali went to X by air. Nasir travelled by boat whereas Shehbaz went by train. For X and W there is no bus service. The person who went to X did not use boat to travel. Now answer the following questions. **(5)**
(i) How did Ahmad travel and where did he go?
(ii) Which mode of transport was used by the person who travelled to X city?

- Q. No. 13. (a)** Differentiate between primary and secondary mental abilities. How the general mental ability scales differ from IQ test. **(5)**

- (b)** $Y = mX + C$ is an equation of straight line. Draw a graph showing relationship between X and Y and relate the equation to the slope and intercept on the graph. **(5)**



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GENERAL KNOWLEDGE-I
(GENERAL SCIENCE & ABILITY)

TIME ALLOWED: THREE HOURS

PART-I(MCQS): MAXIMUM 30 MINUTES

PART-I (MCQS)

PART-II

MAXIMUM MARKS = 20

MAXIMUM MARKS = 80

NOTE: (i) Part-II is to be attempted on the separate Answer Book.

(ii) Attempt ONLY FOUR questions from PART-II, selecting TWO questions from EACH SECTION. ALL questions carry EQUAL marks.

(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.

(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.

(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.

(vi) Extra attempt of any question or any part of the attempted question will not be considered.

(vii) Use of Calculator is not allowed.

PART-II
SECTION-I

- Q. No. 2. (A) What are the factors responsible for environmental pollution? (5)
(B) Briefly explain the main reasons of water-logging in Pakistan. (5)
(C) What do you mean by Ozone depletion and how we can prevent its depletion? (5)
(D) What is an Acid Rain and how it is produced. Briefly describe the dangers associated with it? (5)
- Q. No. 3. (A) Explain in detail the common causes of Heart Attack. (5)
(B) Differentiate between drug addiction and drug abuse. (5)
(C) Draw the structure of human ear and briefly explain its functions. (5)
(D) What is the significance of Vitamins? Describe the sources, uses and deficiency symptoms of fat soluble vitamins. (5)
- Q. No. 4. (A) What is a mirage? Describe in detail the creation of mirage. (5)
(B) Differentiate between the occurrence of Lunar and Solar Eclipse? (5)
(C) Briefly explain what effects are produced due to Rotation & Revolution of Earth? (5)
(D) Most of the household appliances utilize 'DC' then why we generate 'AC' at power stations? (5)
- Q. No. 5. (A) Differentiate between RAM and ROM. (5)
(B) Name three basic buses employed in a computer and explain what each is used for. (5)
(C) Draw a basic computer block diagram and briefly explain the function of each part. (5)
(D) Describe various types of computers classified on the basis of size, memory, capacity and speed. (5)

SECTION-II

- Q. No. 6. (A) Differentiate with examples between a "Pictogram" and "Histogram". (5)
(B) The teachers of a certain school were asked to indicate the average number of hours they spend on marking students assignments each day. The following set of data was obtained (5)
- | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 6 | 4 | 3 | 1 | 2 | 2 | 3 | 1 | 4 |
| 1 | 2 | 5 | 3 | 4 | 5 | 2 | 2 | 3 |
| | 3 | 1 | 2 | 2 | 3 | 1 | 4 | 2 |
- Construct a frequency table and draw a Histogram illustrating the results.
- (C) How many teachers responded to the survey? (5)
(D) What the longest number of hours and most common number of hours are spent? (5)

GENERAL KNOWLEDGE-I (GENERAL SCIENCE & ABILITY)

- Q. No.7.** (A) A man buys 5kg of meat at Rs.500 per kg. In addition, for every kilogram of meat purchased, he has to pay a consumption tax of 6% on the selling price. Calculate the total amount of money that he has to pay. (5)
- (B) It takes Ali 30 minutes to mark a paper. Aslam only needs 25 minutes to mark a paper. If they both start marking papers at 10:00 AM, at what time they will finish marking at the same time? (5)
- (C) Two bus tickets from Rawalpindi to Islamabad and three tickets from Rawalpindi to Murree cost Rs.770 but three tickets from Rawalpindi to Islamabad and two tickets from Rawalpindi to Murree cost Rs.730. What are the fares for cities Islamabad and Murree from Rawalpindi? (5)
- (D) A told B that C is his father's nephew. D is A's cousin but not the brother of C. What relationship is there between D and C? (5)
- Q. No. 8.** (A) Divide Rs.500 between Arham, Mariam and Sarim so that Arham gets $\frac{2}{3}$ of what Mariam gets and Mariam gets $\frac{1}{4}$ of what Sarim gets. Find the share of each. (5)
- (B) A school has enough provision of food for 52 days. After 20 days a group of 400 students arrives and the food would have last for 24 days only. How many students are there in the school actually? (5)
- (C) A man walks 2km towards North. Then he turns to East and walks 10km. After this he turns to North and walks 3km. Again he turns towards East and walks 2km. How far is he from the starting point? (5)
- (D) In a certain code language COMPUTER is written as RFUVQNPC. How will MEDICINE be written in that code language? (5)

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