

Serial No.

QUESTION BOOKLET



30137

GENERAL STUDIES (03)

Time Allowed : 3 Hours

Maximum Marks : 100

INSTRUCTIONS FOR CANDIDATES

1. Please do not open this Question Booklet until you are told to do so.
2. Candidate must fill up the necessary information in the space provided on the OMR Answer Sheet before commencement of the test.
3. For marking the correct answer, darken one circle by **black or blue** ball-point pen only. Please do not mark on more than one circle. Darkening on more than one circle against an answer will be treated as wrong answer.
4. Do not detach any leaf from this Question Booklet. After the examination, hand over the OMR Answer Sheet to the Room Invigilator.
5. Each question carries 1 mark. There is no negative marking for any wrong answer.
6. Possession and use of Calculator, Mobile Phone and Pager is prohibited in the Examination Hall.
7. Candidates are informed that evaluation of OMR Sheets will be done by Electronic Machine. So, they should shadow the bubbles of Roll No., Booklet Series and Booklet No. properly, otherwise Machine will not be able to evaluate it. Failure to comply this instruction will be sole responsibility of the candidates.

SEAL

1. What does the letter 'S' stand for in the Web terminology 'HTTPS'?
 - (A) Safe
 - (B) Secure
 - (C) Short
 - (D) Sorter
2. Which of the following agencies in India provides financial support for the promotion of alternative energy usage?
 - (A) CERN
 - (B) NCERT
 - (C) SDBI
 - (D) IREDA
3. Which of the following is not a major objective of a multipurpose river valley project?
 - (A) Flood control
 - (B) Power generation
 - (C) Pest control
 - (D) Irrigation
4. What is the full form of CDMA in mobile phones?
 - (A) Code Division Multiple Access
 - (B) Code Destination Major Access
 - (C) Card Distribution Multiple Access
 - (D) Catalogue Dipolar Maximum Access
5. Mount Sharp, where the NASA rover Curiosity is supposed to conduct experiments, is on which of the following astral bodies?
 - (A) Jupiter
 - (B) Moon
 - (C) Mars
 - (D) Saturn
6. Where was the Indian Science Congress, 2012 held?
 - (A) New Delhi
 - (B) Shillong
 - (C) Ludhiana
 - (D) Bhubaneswar
7. In which year was IIT, Patna, established?
 - (A) 2008
 - (B) 2009
 - (C) 2010
 - (D) 2011
8. Which is the apex body of Indian scientists?
 - (A) Indian Institute of Science
 - (B) Indian National Science Academy
 - (C) National Academy of Science
 - (D) Institute of Engineers

9. Which of the following organizations is working to spread scientific sensibility among school children aged 10 to 17 years in the country in a big way?
- (A) CARE Science
 - (B) Rashtriya Pragya Vikas
 - (C) National Children's Science Congress
 - (D) Vidyalaya Vigyan Setu
10. Which of the following air pollutants are responsible for acid rain within and downwind areas of major industrial emission?
- (A) H_2S and oxides of Nitrogen
 - (B) SO_2 and oxides of Nitrogen
 - (C) CO_2 and H_2S
 - (D) CH_4 and H_2S
11. One coulomb of charge is contributed by how many electrons?
- (A) 0.625×10^{19}
 - (B) 1.6×10^{19}
 - (C) 10^{19}
 - (D) 1.6×10^{12}
12. INSPIRE (Innovation in Science Pursuit for Inspired Research) is a programme initiated by
- (A) SERC
 - (B) IDBI
 - (C) DST
 - (D) UCET
13. When n number of resistances each of value r are connected in parallel, then the resultant resistance is x . When these n resistances are connected in series, their total resistance is
- (A) nx
 - (B) n^2x
 - (C) $\frac{x}{n}$
 - (D) rnx
14. At which of the following places in South India are the people protesting against the building of a nuclear power plant?
- (A) Coonoor
 - (B) Kudanakulam
 - (C) Tenali
 - (D) Athola
15. Sunita Williams went to the space station on July 15 in a spacecraft belonging to which of the following countries?
- (A) China
 - (B) USA
 - (C) Russia
 - (D) India

16. What is a 'blue moon'?
- (A) When a second full moon appears in a calendar month
 - (B) When there is a halo of water vapour visible around the moon
 - (C) The last full moon of the year
 - (D) As moon is visible from the Arctic regions
17. Where is the headquarters of Indian Space Research Organization situated?
- (A) Chennai
 - (B) Sri Harikota
 - (C) Bengaluru
 - (D) New Delhi
18. What is Ductal?
- (A) A new kind of concrete
 - (B) An electron microscope
 - (C) A superconductor
 - (D) A super crane
19. Wet sand is more compact than dry sand
- (A) because water creates water bridges between sand grains
 - (B) because sand acquires the strength of concrete
 - (C) It is false
 - (D) because the volume of sand decreases by half
20. Who among the following was not a winner of Nobel Prize for Physics, 2011?
- (A) Saul Perlmutter
 - (B) Brian P. Schmidt
 - (C) Adam G. Riess
 - (D) W. C. Rontgen
21. One kWh is the same as
- (A) 36×10^5 watt
 - (B) 36×10^5 erg
 - (C) 36×10^5 joule
 - (D) 36×10^5 BTU
22. Which of the following do common microwave ovens use to generate energy?
- (A) Thermostat
 - (B) Magnetron
 - (C) Particle accelerator
 - (D) Superconductors
23. To which class of levers does the bottle opener belong?
- (A) Class I
 - (B) Class II
 - (C) Class III
 - (D) None of the above

24. Which of the following layers of the atmosphere blocks most of the ultraviolet rays from space?
- (A) Stratosphere
 - (B) Troposphere
 - (C) Ozonosphere
 - (D) None of the above
25. What is Maglev?
- (A) A supernova
 - (B) A system of transport
 - (C) The tallest building
 - (D) A telescope
26. Who among the following discovered superconductivity?
- (A) H. K. Onnes
 - (B) Walther Meissner
 - (C) Robert Ochshenfeld
 - (D) John Bardeen
27. In which of the following activities are wingsuits used?
- (A) Skydiving
 - (B) Scuba diving
 - (C) Boxing
 - (D) Parasailing
28. What is biomimicry?
- (A) A new movement in Sweden making fun of biology texts
 - (B) Imitation of nature to create new products
 - (C) A latest discipline in biological studies to study fatal diseases
 - (D) Writing biography of a famous person in the fullest detail
29. The following are the half-lives of 4 active isotopes. Which one of the following is the most dangerous to handle?
- (A) 3 billion years
 - (B) 100 years
 - (C) 0.01 minute
 - (D) 30 days
30. Which is the largest dam in India?
- (A) Bhakra-Nangal dam
 - (B) Maithon dam
 - (C) Hirakud dam
 - (D) Tehri dam

31. Lightning strikes sometimes explode trees, because
- (A) the lightning bolt strikes very fast
 - (B) the leaves become electrically discharged during the lightning strike
 - (C) the water inside the tree evaporates too rapidly
 - (D) there is biomagnetic repulsion
32. Who among the following invented the crescograph?
- (A) C. V. Raman
 - (B) Homi J. Bhabha
 - (C) Jagadish Chandra Bose
 - (D) S. Ramanujan
33. Which of the following is also known as God particle?
- (A) Hunter boson
 - (B) Higgs boson
 - (C) Hayashi boson
 - (D) Herbig boson
34. Which of the following bodies bestows the Shanti Swarup Bhatnagar Prize for Science and Technology?
- (A) ISRO
 - (B) NCERT
 - (C) CSIR
 - (D) NCSC
35. Who is the chairman of Wipro?
- (A) Ajim H. Premji
 - (B) T. K. Kurien
 - (C) Suresh C. Senapaty
 - (D) Ashok S. Ganguly
36. Which of the following is used in pencils?
- (A) Phosphorus
 - (B) Carbon
 - (C) Graphite
 - (D) Lead
37. In which State is the longest railway bridge in India located?
- (A) Bihar
 - (B) Jharkhand
 - (C) Maharashtra
 - (D) Kerala
38. The Latin word 'scientia', from which the term 'science' has derived, means
- (A) universe
 - (B) knowledge
 - (C) curiosity
 - (D) logic

39. Which of the following commands is used in a document (Microsoft Word) to convert small letters into capitals?
- (A) Ctrl + P
 - (B) Shift + Ctrl + Del
 - (C) Caps Lock + F8
 - (D) Shift + F3
40. Mohs' scale is a scale for testing
- (A) colour intensity
 - (B) electrical conductivity
 - (C) hardness of material
 - (D) velocity of light through different mediums
41. Where was the first underground railway metro started in India?
- (A) Kolkata
 - (B) Delhi
 - (C) Mumbai
 - (D) Chennai
42. What is green technology?
- (A) Technology for the development of green pigments
 - (B) Technology from Far East countries
 - (C) Technology that cares for environment
 - (D) Technology used for producing green plants and trees
43. Since when have the latest rules concerning radiation from mobile phones and telecom towers come in force in India?
- (A) January 1, 2012
 - (B) April 1, 2012
 - (C) July 1, 2012
 - (D) September 1, 2012
44. What is the full form of SAR in terms of cellphone emissions?
- (A) Send and receive
 - (B) Specific absorption rate
 - (C) Satellite aided rolling
 - (D) Specified anticipated return
45. The rear rotor blades in a common helicopter
- (A) provide lift when the pilot takes off during bad weather, especially during thunderstorms
 - (B) are used for supporting the front and rear weights by spinning very rapidly
 - (C) push the tail boom to counter the movement of the main rotor blades
 - (D) cancel the noise in the cockpit

46. The chemical name of the product 'Teflon', also used in nonstick cookware, is
- (A) polytetrafluoroethylene
 - (B) polycarbontetrafluoroethylene
 - (C) polyfluoroethylene
 - (D) polytetrafluoroethyl
47. Who is known as the 'Missile Woman' of India?
- (A) Kamal Ranadive
 - (B) Radha Balakrishnan
 - (C) Kalpana Chawla
 - (D) Tessy Thomas
48. The full form of ICBM in technology is
- (A) Intel Caller Beacon Mode
 - (B) Inter Continental Ballistic Missile
 - (C) Integrated Copula Basic Median
 - (D) Incorporated Collision Beta Models
49. What is the full form of ATM?
- (A) Automated Teller Machine
 - (B) Any Time Money
 - (C) Automatic Travel Money
 - (D) Auto Teller Money
50. What is the full form of SIM in mobile phones?
- (A) Subscriber Identification Modem
 - (B) Subscriber Intelligence Module
 - (C) Subscriber Identity Modem
 - (D) Subscriber Identity Module
51. The breakdown mechanism in a lightly doped $p-n$ junction under reverse biased condition is called
- (A) avalanche breakdown
 - (B) Zener breakdown
 - (C) breakdown by tunnelling
 - (D) high voltage breakdown
52. Sindhughosh, Sankul and Chakra are Indian
- (A) battle tanks
 - (B) fighter aircrafts
 - (C) destroyers
 - (D) submarines

53. The Indian INSAT geostationary satellite has an orbit period that is almost the same
- (A) as that of the earth around its axis
 - (B) as that of the moon around the earth
 - (C) as that of the earth around the sun
 - (D) as that of the moon around its axis
54. Where is the biggest oil refinery of India located?
- (A) Barauni
 - (B) Digboi
 - (C) Jamnagar
 - (D) Mathura
55. Regulation of a DC power supply is given by
- (A) product of no-load output voltage and full-load current
 - (B) ratio of full-load output voltage and full-load current
 - (C) change in output voltage from no load to full load
 - (D) change in output impedance from no load to full load
56. Which of the following is going to introduce 'Green Toilets'?
- (A) Air India
 - (B) Delhi Metro
 - (C) Indian Railways
 - (D) Karnataka Roadways
57. Where are Volvo buses manufactured in India?
- (A) Gurgaon
 - (B) Bangaluru
 - (C) Chennai
 - (D) Sanand
58. The value of g is maximum at
- (A) the poles
 - (B) the equator
 - (C) the tropics
 - (D) None of the above
59. On marshy land, which of the following would be the best means of travelling?
- (A) Sailboat
 - (B) Four-wheel-drive vehicle
 - (C) Jet boat
 - (D) Hovercraft

60. Which of the following contribute most to electricity generation in India?
- (A) Thermal sources of energy
 - (B) Hydroelectric sources of energy
 - (C) Nuclear sources of energy
 - (D) Nonconventional sources of energy
61. What is carbon footprint?
- (A) The total set of greenhouse gas emission caused by an organization, person or event
 - (B) The total amount of carbon dioxide emission caused by an organization, person or event
 - (C) A tradable certificate or permit representing the right of emitting one tonne of carbon dioxide
 - (D) None of the above
62. Photovoltaic cells are generally made of
- (A) selenium
 - (B) phosphorus
 - (C) silicon
 - (D) uranium
63. Which of the following States of India is the largest producer of electricity from wind turbines?
- (A) Maharashtra
 - (B) Gujarat
 - (C) Kerala
 - (D) Tamil Nadu
64. The fighter aircraft Sukhoi, used by the Indian Air Force, is originally from
- (A) Germany
 - (B) Russia
 - (C) France
 - (D) USA
65. Which of the following machines is the Indian Railways going to introduce for selling train tickets?
- (A) ATM
 - (B) ATVM
 - (C) TVM
 - (D) SVM
66. The colour of a star is determined by its
- (A) volume
 - (B) mass
 - (C) temperature
 - (D) distance

67. What is the average temperature of the sun's surface in our solar system?

- (A) 105000 °C
- (B) 55000 °C
- (C) 10500 °C
- (D) 5500 °C

68. Dinosaurs were found in which of the following geological Ages?

- (A) Paleozoic
- (B) Precambrian
- (C) Jurassic
- (D) None of the above

69. Who among the following statesmen has said that dams are the temples of modern India?

- (A) Lal Bahadur Shastri
- (B) Jawaharlal Nehru
- (C) Rajiv Gandhi
- (D) Atal Bihari Vajpayee

70. The large hadron collider is situated near

- (A) Geneva
- (B) Prague
- (C) Brussels
- (D) Madrid

71. One of the winners of the first Yuri Milner Fundamental Physics Award, 2012, from India, is

- (A) Y. Subbarao
- (B) Ashoke Sen
- (C) Sujoy K. Guha
- (D) Rajesh Gopakumar

72. Eye Control TV is an invention by a company belonging to which of the following countries?

- (A) India
- (B) Japan
- (C) Korea
- (D) China

73. Who among the following was the founder of the Apple Company?

- (A) Steve Jobs
- (B) Bill Gates
- (C) Daniel Kottke
- (D) Edwin H. Land

74. The 'Ultrabook' is an initiative of

- (A) Apple
- (B) Intel
- (C) Samsung
- (D) Asus

75. In which year did man first land on the moon?

- (A) 1968
- (B) 1969
- (C) 1970
- (D) 1971

76. Graphene can be used as base material for making

- (A) transistors
- (B) edible oil
- (C) DNA
- (D) fertilizers

77. Who is the Indian cofounder of Hotmail?

- (A) Ramesh Rastogi
- (B) Nandan Nilekani
- (C) N. R. Narayan Murthi
- (D) Sabeer Bhatia

78. What is Hubble?

- (A) A sound-capturing software
- (B) The deepest spot in the world's oceans
- (C) A space telescope
- (D) The largest seagoing crane in Oslo

79. Cloud Computing is a term related with

- (A) artificial rainfall
- (B) Web technology
- (C) acid rains
- (D) lightning phenomenon

80. Cerebral malaria is caused by

- (A) *Plasmodium falciparum*
- (B) *P. ovale*
- (C) *P. malariae*
- (D) None of the above

81. Most hybrid surface vehicles combine

- (A) internal combustion engines and electric motors
- (B) internal combustion engines and air power
- (C) internal combustion engines and external combustion engines
- (D) internal combustion engines and nuclear-powered engines

82. In the context of cameras, what is the full form of SLR?

- (A) Shutter lens release
- (B) Shutter late reflex
- (C) Single lens reflex
- (D) Single lens release

83. The technology commonly used in the remote control of TVs at home is

- (A) Ultraviolet
- (B) Infrared
- (C) Bluetooth
- (D) Radio waves

84. Compact fluorescent lamps pose problems of disposal, because of

- (A) their glass content
- (B) their mercury content
- (C) their sulphur content
- (D) their plastic content

85. Which of the following is not a greenhouse gas?

- (A) CO₂
- (B) CH₄
- (C) N₂O
- (D) None of the above

86. Three Mile Island, Fukushima and Chernobyl are associated with

- (A) nuclear mishaps
- (B) tsunami
- (C) International Science Exhibition
- (D) World Scientists' Meet

87. The full form of HIV is
- (A) Human immunodeficiency virus
 - (B) Human immunopositive virus
 - (C) Human immune virus
 - (D) None of the above
88. In an optical fibre, the refractive index of the core
- (A) is greater than that of the cladding
 - (B) is less than that of the cladding
 - (C) and the cladding is the same
 - (D) None of the above
89. Petrology is
- (A) the study of petrol exploration in marine environments
 - (B) the study of petrol manufacturing in laboratories
 - (C) the geological and chemical studies of rocks
 - (D) the study of radioisotopes found in mineral fuels
90. Who among the following female astronauts holds the record for the longest duration of cumulative space walk?
- (A) Peggy Whitson
 - (B) Sally Ride
 - (C) Pamela Melroy
 - (D) Sunita Williams
91. $P_1V_1 = P_2V_2$ is a derivation based on
- (A) Avogadro's gas law
 - (B) Boyle's law
 - (C) Charles' law
 - (D) None of the above
92. Which of the following areas has been identified by the Department of Scientific and Industrial Research, India, for a global hunt for patented technology to accelerate innovation in the country?
- (A) Affordable healthcare
 - (B) Low-cost diagnostics
 - (C) Solar energy
 - (D) All of the above

93. Which of the following is the 100th space mission of ISRO?

- (A) PSLV C-21
- (B) PSLV III
- (C) Agni IV
- (D) SLV I

94. Homi J. Bhabha was a

- (A) cytologist
- (B) nuclear physicist
- (C) cryologist
- (D) robotics expert

95. Positron emission tomography is commonly used for

- (A) the study of stars
- (B) boring holes in hard materials
- (C) guiding missiles to their targets
- (D) looking at organs in the body

96. A Taser is

- (A) an electroshock weapon
- (B) a depth-surveying apparatus
- (C) a new kind of laser
- (D) a new drug to cure cancer

97. The Gaia theory is related to

- (A) Mercury's irregular orbit
- (B) Pluto being outside our solar system
- (C) Saturn's rings and their origin
- (D) Earth as a single organic complex

98. Stephen Hawking is

- (A) a British theoretical physicist
- (B) an American theoretical physicist
- (C) a German theoretical physicist
- (D) a French theoretical physicist

99. Where is India's Maitri Research Station located?

- (A) Ladakh
- (B) Gangotri
- (C) Andaman and Nicobar Islands
- (D) Antarctica

100. Isaac Asimov is a

- (A) scientist
- (B) astronaut
- (C) science fiction writer
- (D) environmental activist

SPACE FOR ROUGH WORK

SEAL

Y13—2900

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