प्रश्नपत्रिका
इंग्लिश व सामान्य अध्ययन

(1) सदर प्रश्नपत्रिकेत 150 अनि‌वार्य प्रश्न आहेत. वेजले त्यांनी प्रश्नात उत्तर दिल्यास तुम्हाच्या कर्मांपूर्ती व प्रश्नपत्रिकेत सर्व प्रश्न आहेत. किती नाहीत ते याच्या कर्मांपूर्तीत काही नाहीत ते तुमची कर्मांपूर्तीत. अशा स्थिती अन्य काही देय आहेला तर ही प्रश्नपत्रिकेत सर्वेचा काम करावास लागेल चलवू हातांत.

(2) आपला पॉर्टिकांक ज्या चौकोनांत "व" न विसरता बॉलपेनाने लिहावा.

(3) वर छापलेला प्रश्नपत्रिकेचा क्रमांक तुमच्या उत्तरपत्रिकेला विचित्र आणे उत्तरपत्रिकेची चूकोनेप्रमाणे न विसरता नयून करावा.

(4) या प्रश्नपत्रिकेची तालुकदा प्रश्न 4 पर्यंत तरी सुचविलेली असून त्यांचा नंबर 1, 2, 3 आणि 4 असे क्रमांक दिलेले आहेत. लक्ष ठेवा तसेच सहस्रपदी आद्यकाळकात वेगळी उत्तरपत्रिकेच्या तुम्हाच्या उत्तरपत्रिकेच्या प्रश्नांमध्ये नसलेले प्रश्न नूतन तालुकदा प्रश्न करावा. अशा प्रकारे उत्तरपत्रिकेच्या तालुकदा प्रश्नांना नवीनतम प्रश्न करण्यासाठी अतिशय लागेले आहेत. या कारणात फक्त क्रमांक "शाई" व बॉलपेन वापरता, पेंसिल व ग्राहक वापरने नयून नाही.

(5) सर्व प्रश्नांना साधारण गुण आहेत. यासारखा सर्व प्रश्नांना उत्तर दिले जात आहेत. त्यासारखा चुका होणार नाहीत तरी त्यासारखा चुका होणार नाही. अशा प्रकारे या प्रश्नांमध्ये तुम्हाकडे बनवू देता असेल. अशा प्रकारे शेवटच्या प्रश्नांमध्ये तुम्हाकडे बनवू देता असेल. अशा प्रकारे प्रश्नांमध्ये "बुुकिया" तुम्हाकडे बनवू देता असेल. अशा प्रकारे प्रश्नांमध्ये "बुुकिया" तुम्हाकडे बनवू देता असेल.

(6) उत्तरपत्रिकेच्या एकच नमूद केलेले उत्तर छोटा रूपांत नयून. नमूद केलेले उत्तर छोटून नव्याने उत्तर दिल्यास ते पत्ताले बांधण्याय नही.

(7) प्रश्नमाला उत्तर-पत्रिकेच्या चूकोने प्रश्नांकन करताना व्यक्तिरुपात फक्त उपर्युक्त प्रश्नपत्रिकेचा तालुकदा प्रश्नांकन करता असेल. अन्यथा तयार करण्यासाठी फक्तही उपर्युक्त प्रश्नपत्रिकेचा तालुकदा प्रश्नांकन करणार असेल. अन्यथा तयार करण्यासाठी फक्तही उपर्युक्त प्रश्नपत्रिकेचा तालुकदा प्रश्नांकन करणार असेल.

पुढील सुचना प्रश्नपत्रिकेच्या आतिश पृष्ठावर पहा
1. He takes after his father in many ways. Which of the following alternatives best explains the meaning of the above underlined phrase?
   (1) occupy               (2) resembles
   (3) comprehends          (4) carry

2. When the car in front came to an abrupt stop, we very nearly ran into it. Which of the following alternatives would best express the meaning of the underlined word in the above sentence?
   (1) slow                 (2) rude
   (3) sudden               (4) broken

3. Identify from the given alternatives the appropriate synonym of the underlined word in the following sentence:
   A week of wet weather in the middle of the harvest would be a great calamity.
   (1) discovery            (2) message
   (3) claim                (4) disaster

4. Japanese goods are inferior ________ Chinese goods. Choose the appropriate alternative to fill in the blank in the above sentence.
   (1) than                 (2) to
   (3) of                  (4) as

5. Delhi is one of the biggest city in India. Which of the following parts of the above sentence contains an error in it?
   (1) Delhi is            (2) one of the
   (3) biggest city        (4) in India

6. They are watching a movie. Choose from the following alternatives, the correct passive form of the above sentence.
   (1) A movie is watched by them.
   (2) A movie is being watched by them.
   (3) A movie has been watched by them.
   (4) A movie was watched by them.

7. My wallet has been stolen. Choose from the following alternatives the correct active form of the above sentence.
   (1) Stolen has been my wallet.            (2) Stolen my wallet has been.
   (3) Some one has stolen my wallet.        (4) My wallet is stolen.

8. She must weep ________ she will die. Which of the following alternatives can best fill the blank in the above sentence?
   (1) but                    (2) and
   (3) when                  (4) or
9. Choose one of the alternatives that forms the adverb clause in the following sentence:
   Don't count your chickens before they are hatched.
   (1) Don't count          (2) are hatched
   (3) before they are hatched  (4) Don't count your chickens

10. Choose one of the alternatives that forms the adjective clause in the following sentence:
    God helps those who help themselves.
    (1) who help themselves  (2) God helps those
    (3) those who help themselves  (4) God helps themselves

11. Choose the correct negative sentence of the affirmative sentence given below:
    A few farmers saved their crop.
    (1) Only some farmers saved their crop.
    (2) Not all farmers saved their crop.
    (3) A few farmers did not save their crop.
    (4) Not only some farmers saved their crop.

12. Choose one of the alternatives that forms the noun clause in the following sentence:
    What cannot be cured must be endured?
    (1) must be endured          (2) What cannot be cured
    (3) What must be endured     (4) be cured must be

13. Choose the correct assertive form of the exclamatory sentence given below:
    Oh that I had the wings of a bird!
    (1) I do not wish I had the wings of a bird.
    (2) I wish I had the wings of a bird.
    (3) Wouldn't it be nice if I had the wings of a bird?
    (4) If I had the wings of a bird I would fly.

14. Choose the correct alternative to fill the blank in the following sentence:
    Neither of the answers ________ correct.
    (1) be           (2) are    (3) is           (4) were

15. Choose the correct alternative to fill the blank in the following sentence:
    Abstain ________ evil and do good.
    (1) for          (2) from    (3) off           (4) of
16. I was surprised when I heard of his failure. Which of the given alternatives best expresses the meaning of the underlined word?
   (1) taken in    (2) taken up
   (3) taken aback (4) taken to

17. Hydrogen is the lightest of all gases. Choose from the alternatives the sentence giving the positive degree of comparison of the above sentence.
   (1) Hydrogen is lighter than any gas.
   (2) No gas is lighter than hydrogen.
   (3) No gas is as light as hydrogen.
   (4) Hydrogen is as light as any other gas.

18. He was generous even to his enemies. Choose the correct noun form of the underlined word.
   (1) generously    (2) generousness
   (3) generocity     (4) generosity

19. The ________ for the factory was chosen by the architect. Choose the correct alternative to fill in the blank.
   (1) sight    (2) site    (3) cite    (4) sait

20. He said “I am glad to be here this evening.” Pick out the correct alternative that gives the above sentence in indirect speech.
   (1) He said that I was glad to be there this evening.
   (2) He said that he was glad to be there that evening.
   (3) He said that he was glad to be here this evening.
   (4) He said that I am glad to be here.

21. Science is a good servant but a bad master. Which of the following is a complex sentence of the above sentence?
   (1) Though science is a good servant, it is a bad master.
   (2) Despite being a good servant, science is a bad master.
   (3) Science is a bad master and not a good servant.
   (4) Science is a good servant as well as a good master.
22. Choose from the alternatives the noun form of the verb 'sit'.
   (1) sit  (2) sat  (3) seat  (4) sitting

23. Choose from the alternatives the verb form of the noun 'heir'.
   (1) inherit  (2) heiress  (3) heirling  (4) heritage

24. Choose the correct word which means "one travelling on foot".
   (1) equestrian  (2) pedestrian
   (3) philanthropist  (4) pessimist

25. Choose the correct word which means "having a bad reputation".
   (1) famous  (2) nocturnal  (3) irreputable  (4) notorious

   Fill in the blank choosing from the alternatives the correct word denoting collection.
   (1) flock  (2) flight  (3) fleet  (4) pride

27. Choose the correct antonym for the word 'make'.
   (1) remake  (2) remark  (3) mar  (4) mare

28. Choose the correct alternative which explains the phrase "fall flat".
   (1) to fall down  (2) to become flat and shapeless
   (3) to impress  (4) to produce no effect

29. Choose the alternative which best explains the idiom "let the cat out of the bag".
   (1) reveal a secret by mistake  (2) find out the hiding place
   (3) being unable to manage an animal  (4) to do something dangerous

30. Choose the alternative which best explains the proverb "Rome was not built in a day".
   (1) It took many years to build Rome.
   (2) Time, patience and hard work are needed for an important and difficult work.
   (3) One has to be sufficiently determined and willing.
   (4) With the passage of time, pain, grief and enmity are less felt.
31. When I reached the station the train ________.
Choose the correct form of the verb 'to leave' to fill in the above blank.
(1) left  (2) had left  (3) will leave  (4) had been leaving

32. He has lived here ________ ten years.
Choose the correct alternative to fill in the above blank.
(1) since  (2) from  (3) for  (4) till

33. Fill in the blank using the correct question tag:
   They mustn't do that, ________
   (1) mustn't they?  (2) must they?  (3) can they?  (4) must that?

34. Identify the type of pronoun italicized in the sentence.
   He himself cleaned the room.
   (1) Personal pronoun  (2) Relative pronoun  (3) Distributive pronoun  (4) Reflexive pronoun

35. I am the man ________ seeks your guidance.
   Fill the above blank using the correct relative pronoun.
   (1) that  (2) who  (3) which  (4) whose

36. Fill in the blank using an appropriate article.
   Mauritius is in ________ Arabian Sea.
   (1) the  (2) an  (3) a  (4) no article

37. Identify from the alternatives the subject of the following sentence:
   Can he help you?
   (1) can  (2) he  (3) help  (4) you

38. The four sisters quarrelled ________ themselves.
   Fill in the above blank using the correct preposition.
   (1) within  (2) among  (3) between  (4) over

SPACE FOR ROUGH WORK
39. Would you mind occupying the next seat.
Which of the following punctuation marks would be appropriate at the end of the above sentence?

(1) Full stop
(2) Exclamation mark
(3) Question mark
(4) Colon

40. He is too clever to be easily deceived.
Choose the correct alternative containing the use of 'so that' instead of 'too'.

(1) He is so clever that he cannot be easily deceived.
(2) He is so clever that he can be easily deceived.
(3) He is so clever to be easily deceived.
(4) He is too clever that he can be easily deceived.

Comprehension (Questions 41 – 45).
Read the given passage carefully and answer the following questions:

At the present time the fiercest and most dangerous animal with which human beings have to contend is man, and the dangers arising from purely physical causes have been very rapidly reduced. In the present day, therefore, fear finds little scope except in relation to other human beings, and fear itself is one of the main reasons why human beings are formidable to each other. It is a recognised maxim that the best defence is attack; consequently people are continually attacking each other because they expect to be attacked. Our instinctive emotions are those that we have inherited from a much more dangerous world, and contain, therefore, a much larger proportion than they should; this fear, since it finds little outlet elsewhere, directs itself against the social environment, producing distrust and hate, envy, malice and all uncharitableness. If we are all to profit fully by our new-won mastery over nature, we must acquire a more lordly psychology; instead of the cringing and resentful terror of the slave, we must learn to feel the calm dignity of the master.

Reverting to the impulses of approach and withdrawal this means that impulses of approach need to be encouraged, and those of withdrawal need to be discouraged. Like everything else, this is a matter of degree. I am not suggesting that people should approach tigers and pythons with friendly feelings: I am only saying that since tradition grew up in a more dangerous world, the present day occasions for fear and withdrawal are less numerous than tradition would lead us to suppose. The conquest of nature has made a more friendly and co-operative attitude between human beings possible and if rational men co-operated and used their scientific knowledge to the full, they could now secure the economic welfare of all — which was not possible in any earlier period.

SPACE FOR ROUGH WORK
41. What does the author recommend in this passage?
(1) Approaching tigers and pythons with friendliness
(2) Co-operation between human beings
(3) The conquest of nature
(4) None of the above

42. Which is the most dangerous creature in the world at present?
(1) Dangerous animals
(2) Tigers and pythons
(3) Lions and leopards
(4) Man

43. Which is the basic feeling in mutual conflict?
(1) Envy and malice
(2) Fear
(3) Impulses of approach
(4) Hate

44. Which is the best way to defend oneself?
(1) Withdrawal
(2) Approach
(3) Attack
(4) Co-operation

45. What would happen if human beings were to use their scientific knowledge to the maximum?
(1) The dangerous creatures could be destroyed
(2) They can make the slaves cringe with terror
(3) It can lead to conquest of nature
(4) Economic welfare of all men would become possible

Comprehension (Questions 46–50).
Read the given passage carefully and answer the following questions:

Technology seems to come in waves. In the field of energy we are witnessing the fossil wave, solar and fusion are to follow. Between now and 2050 there are, it seems to me, three other technology waves which will blossom, plateau and to a large extent, determine what life will be like for the boom babies and their progeny. These technologies are electronics, genetics and psychology.

Electronics is blossoming now and will plateau in the first or second decade of the next century. This means that essentially anything we can conceive of doing electronically can be done; go anywhere telephones, fingertips information on nearly any topic, machines which speak and listen, three dimensional life size television, complete automation of appliances.

SPACE FOR ROUGH WORK
Well before 2050 progress in artificial intelligence will certainly have caused us to re-examine what it means to be human. When machines which augmented human mechanical capability were first introduced at the nest of the industrial revolution, the Luddites, fearing the machine age, asked the question, “What’s left for humans?”

The answer at that time was that the human role is intellectual. Now there is the real possibility that machines will be able to perform intellectual tasks as well. Take any measure of human intellectual performance—IQ, recall, attention span, creativity. By early in the next century machines will be available which perform better in these dimensions than human beings. The Luddites questions will be asked again.

46. The passage
   (1) foretells the progress of technology upto 2050
   (2) is a commentary on the achievements of electronics
   (3) deals with the inventive genius of man
   (4) emphasises the helplessness of man in the age of technology

47. The passage foretells that between now and 2050 there will be many waves of technology except that of
   (1) electronics   (2) genetics   (3) psychology   (4) fossil fuel

48. The passage provides
   (1) the author’s stand in favour of technology
   (2) an irrational account of the future
   (3) an objective look into the future
   (4) a highly professional picture of the future

49. The word ‘plateau’ means
   (1) the philosophy of Plato
   (2) to reach a high level
   (3) to grow strong
   (4) to spread far and wide

50. The word ‘augment’ means
   (1) transform
   (2) computerize
   (3) reduce
   (4) increase

SPACE FOR ROUGH WORK
51. When was the First Five Year Plan launched in India?
   (1) April 1950   (2) April 1951   (3) May 1950   (4) May 1951

52. Between which of the following countries was the “Panchasheel Treaty” signed on 28th June 1954?
   (1) India – Pakistan   (2) India – Bangladesh
   (3) India – China      (4) India – Sri Lanka

53. Who started ‘Sharda Sadan’ school at Mumbai in the year 1889?
   (1) Pandita Ramabai   (2) Savitribai Fule
   (3) Anandibai Karve   (4) Tarabai Shinde

54. During whose tenure, was the first regular census of India held in 1881?
   (1) Lord Mayo        (2) Lord Rippon
   (3) Lord Dufferin    (4) Lord Curzon

55. Who was the founder of Banaras Hindu University?
   (1) Dr. Sarvapalli Radhakrishnan
   (2) Pt. Madan Mohan Malviya
   (3) Lord Hardinge
   (4) Lord Chelmsford

56. When was the Indian Independence Act 1947, passed by the British Parliament?
   (1) 3rd June 1947     (2) 4th July 1947
   (3) 18th July 1947    (4) 15th August 1947

57. From ________, the Panchayat Raj System is started in Maharashtra.
   (1) 5th March 1962    (2) 13th March 1962
   (3) 1st April 1962    (4) 1st May 1962

58. Who amongst the following is known as ‘Rashtrasant’?
   (1) Baba Amte
   (2) Tukdoji Maharaj
   (3) Anna Hazare
   (4) Gadge Baba

SPACE FOR ROUGH WORK
59. Which of the following is an important cash crop in Khandesh, Western Vidharbha and parts of Marathwada?
   (1) Sugarcane  (2) Soybean  (3) Cotton  (4) Tobacco

60. Which of the following places receives the highest rainfall in Maharashtra?
   (1) Bhimashankar  (2) Gaganbavda  (3) Mahabaleshwar  (4) Amboli

61. As per the Census 2001, which of the following districts of Maharashtra has the lowest sex ratio (Male – female ratio)?
   (1) Ratnagiri  (2) Gondia  (3) Sindhudurg  (4) Pune

62. Which of the following districts has the largest number of Maharashtra Industrial Development Corporation (MIDC) estates?
   (1) Thane  (2) Sangli  (3) Dhule  (4) Parbhani

63. Which of the following districts has the least (minimum) area under Plantation Farming?
   (1) Washim  (2) Nandurbar  (3) Hingoli  (4) Buldhana

64. Maharashtra state has been broadly divided into _______ physical divisions.
   (1) six  (2) four  (3) three  (4) five

65. Which state of India has the largest buffalo population?
   (1) Maharashtra  (2) Uttar Pradesh  (3) Gujarat  (4) Karnataka

66. The place nearest to mainland Sri Lanka from India is
   (1) Kanyakumari  (2) Dhanushkodi  (3) Rameshwaram  (4) Chennai

67. Where are tea and coffee both grown in India?
   (1) North-Western India  (2) North-Eastern India  (3) Central India  (4) Southern India

SPACE FOR ROUGH WORK
68. In November 2009, ________ was appointed as the Chief Minister of Maharashtra.
   (1) Vilasrao Deshmukh  (2) Ashok Chavan
   (3) Sushilkumar Shinde  (4) Narayan Rane

69. The Advocate General of State is appointed by
   (1) President  (2) Legislative Council
   (3) Chief Minister  (4) Governor of State

70. Lok Sabha Speaker ________ appointed Gopinath Munde on January 2010 as Chairman of Public Accounts Committee on the recommendation of Leader of the Opposition Sushma Swaraj.
   (1) G.M.C. Balayogi  (2) Manohar Joshi
   (3) Meira Kumar  (4) Somnath Chatterji

71. The Government of India on June 3, 2010, announced the appointment of the former Chief Justice of India, Justice ________, as the sixth chairperson of the National Human Rights Commission.
   (1) K.G. Balakrishnan  (2) Ramesh Chandra Lahoti
   (3) S. Rajendra Babu  (4) V.N. Khare

72. The ________ is the head of the Panchayat Samiti administration.
   (1) Chief Officer  (2) Extension Officer
   (3) Chief Executive Officer  (4) Block Development Officer

73. The records and accounts of the Gram Panchayat are maintained by the
   (1) Gramsevak  (2) Sarpanch
   (3) Deputy Sarpanch  (4) Panchas

74. Who is the founder of Local Self Government in India?
   (1) Lord Rippon  (2) Lord Dalhousie
   (3) Lord Mountbatten  (4) Morley Minto

75. The elected and ex-officio members from the general body of the Zilla-Parishad, meet at least once in ________ months.
   (1) two  (2) three  (3) five  (4) six

SPACE FOR ROUGH WORK
76. The Superposition theorem is essentially based on the concept of
   (1) Reciprocity          (2) Linearity
   (3) Duality              (4) Non-linearity

77. For normal SCRs turn-on time is
   (1) less than turn-off time $t_q$
   (2) more than $t_q$
   (3) equal to $t_q$
   (4) half of $t_q$

78. A choke coil is an example of
   (1) pure inductive circuit
   (2) R-L circuit
   (3) R-C circuit
   (4) R-L-C circuit

79. The effect of increased temperature upon the resistance of the conductor is
   (1) to increase
   (2) to decrease
   (3) no change
   (4) increase in length of conductor

80. The unit for flux density is
   (1) Tesla
   (2) $A/mm^2$
   (3) $N/m^2$
   (4) Weber/metre

81. If the back emf in a d.c. motor vanishes suddenly, the motor will
   (1) start hunting
   (2) burn
   (3) run at very high speed
   (4) run at very low speed

82. The lamp that cannot sustain much voltage fluctuations is
   (1) sodium vapour lamp
   (2) mercury vapour lamp
   (3) incandescent lamp
   (4) mercury iodide lamp

SPACE FOR ROUGH WORK
83. In a parallel combination of four capacitors, 10 μF, 20 μF, 30 μF and 40 μF, the maximum current passes through

(1) 10 μF  (2) 20 μF  (3) 40 μF  (4) 30 μF

84. A three-phase induction motor is fed from a balanced three-phase supply on the rotor side, short-circuiting the stator terminals. The speed of the rotating magnetic field is

(1) zero  (2) equal to rotor speed
(3) equal to synchronous speed  (4) equal to slip speed

85. The illumination at any point on a surface is directly proportional to the cosine of the angle between the normal at that point and direction of luminous flux.

This statement is associated with

(1) Planck's law  (2) Bunsen's law
(3) Macbeth's law  (4) Lambert's cosine law

86. Annual estimated depreciation charges for a plant are heavy during early years in case of

(1) Diminishing value method  (2) Sinking fund method
(3) Straight line method  (4) None of the above

87. Analogue Measuring Instruments connected to AC circuit indicate

(1) RMS value  (2) Average value
(3) Maximum value  (4) None of the above

88. In controlled rectifiers, the nature of the load current i.e. whether load current is continuous or discontinuous

(1) does not depend on type of load and firing angle delay
(2) depends both on type of load and firing angle delay
(3) depends only on type of load
(4) depends only on firing angle delay

89. The permissible variation of frequency in power system is

(1) ± 1%  (2) ± 3%  (3) ± 5%  (4) ± 10%

90. Minority carriers in p-type semiconductors are

(1) free electrons  (2) free holes
(3) holes and electrons both  (4) None of the above

SPACE FOR ROUGH WORK
91. A large diversity factor of the load in a power system
   (1) reduces the installation cost
   (2) increases the installation cost
   (3) does not affect the installation cost
   (4) increases the total cost

92. A step-up chopper has $V_s$ as the source voltage and $\alpha$ as the duty cycle. The average output voltage for this chopper is given by
   (1) $V_s (1 + \alpha)$
   (2) $V_s / (1 - \alpha)$
   (3) $V_s (1 - \alpha)$
   (4) $V_s / (1 + \alpha)$

93. For a system having $Z_s >> Z_{L'}$, which of the following relays is most suitable?
   (1) IDMT
   (2) DTOC
   (3) Very inverse OC
   (4) Extreme inverse OC

94. A single-phase full bridge inverter can operate in load-commutation mode in case load consists of
   (1) RL
   (2) RLC underdamped
   (3) RLC overdamped
   (4) RLC critically damped

95. Back to back HVDC is used to
   (1) increase the transmission capability
   (2) decrease line losses
   (3) provide stable interconnection
   (4) reduce voltage drop

96. Transient response in R-L-C series circuit with d.c. excitation is overdamped when
   (1) $\left( \frac{R}{2L} \right)^2 > \frac{1}{LC}$
   (2) $\left( \frac{R}{2L} \right)^2 < \frac{1}{LC}$
   (3) $\left( \frac{R}{2L} \right)^2 = \frac{1}{LC}$
   (4) None of the above

97. A 5 kVA transformer has iron loss 300 W and full load copper loss 400 W. The maximum efficiency of the transformer would occur when total loss is
   (1) 700 W
   (2) 600 W
   (3) 800 W
   (4) 500 W

98. Surge impedance of overhead line is of the order of
   (1) tens
   (2) ones
   (3) hundreds
   (4) thousands

99. A voltage wave of 50 Hz, having an rms value of 415 V is expressed as
   (1) $415 \sin 314t$
   (2) $415 \sqrt{2} \sin 314t$
   (3) $415 \sqrt{2} \sin 50t$
   (4) $415 \sin 50t$

SPACE FOR ROUGH WORK
100. If the power consumed by a balanced system with delta connected resistances is 300 W, what will be the power consumed when the same are connected in star fashion?

(1) 300 W  (2) 150 W  (3) 100 W  (4) 900 W

101. The effect of rainfall on the insulator is

(1) breakdown strength of insulation decreases
(2) flashover length reduces
(3) flashover voltage increases
(4) flashover length increases

102. Heat sinks used for transistors and semi-conductors

(1) increase the reverse current  (2) decrease the forward current
(3) control the temperature effect  (4) help in doping process

103. In a particular circuit

\[ I = I_m \sin (\omega t - 270) \]
& \[ V = V_m \sin (\omega t + 90) \].

Then type of circuit is

(1) pure resistive circuit  (2) pure inductive circuit
(3) pure capacitive circuit  (4) None of the above

104. When the supply voltage to an induction motor is reduced by 10%, the maximum torque will decrease approximately by

(1) 5%  (2) 10%  (3) 20%  (4) 40%

105. The inductance of a power transmission line increases with

(1) decrease in line length
(2) increase in diameter of conductor
(3) increase in spacing between the phase conductors
(4) increase in load current carried by conductors

106. The arc voltage in a circuit breaker is

(1) in phase with arc current  (2) lagging arc current by 90°
(3) leading arc current by 90°  (4) lagging arc current by 180°
107. Which of the following devices was specifically developed to control a.c. power by varying the circuit conduction angle?
   (1) The SCR
   (2) The Triac
   (3) The Diac
   (4) The two transistor negative resistance switch

108. Shunt capacitors in a substation
   (1) consume lagging VAR
   (2) deliver lagging VAR
   (3) consume active power
   (4) deliver active power

109. The standard secondary current for a current transformer is
   (1) 15 Amp.
   (2) 10 Amp.
   (3) 5 Amp.
   (4) 2 Amp.

110. In an RLC circuit the power factor at resonance condition is
   (1) zero
   (2) one
   (3) 0.9
   (4) 0.5

111. The ratio of the output to input change for a given measuring system is referred to as
   (1) Sensitivity
   (2) Linearity
   (3) Stability
   (4) None of the above

112. A 10 V battery is connected to a 6 Amp. current source. The power absorbed by the battery and the current source is given by (current enters the positive terminal of battery)
   (1) 60 W, 60 W
   (2) 60 W, −60 W
   (3) −60 W, −60 W
   (4) −60 W, 60 W

113. In a n-phase circuit, the phase angle between successive phases is given by
   (1) 120°
   (2) 150°
   (3) $\frac{360^\circ}{n}$
   (4) $\frac{180^\circ}{n}$

114. Low resistance is measured by
   (1) Maxwell’s bridge
   (2) Anderson’s bridge
   (3) Kelvin’s double bridge
   (4) Hay’s bridge
115. Gearing, backlash, friction between moving parts and scale accuracies are generally known as
(1) instrument errors  (2) interference errors
(3) calibration errors  (4) interaction errors

116. In an Epstein square, used for finding the iron loss in a stack of laminations, the laminations are so arranged that
(1) plane of each lamination is perpendicular to the plane of square
(2) plane of each lamination is parallel to the plane of square
(3) plane of each lamination may be either parallel or perpendicular to the plane of square
(4) plane of each lamination may be at any angle to the plane of square

117. Damper winding is provided in synchronous motor
(1) to reduce speed  (2) to prevent hunting
(3) to provide starting torque  (4) both (2) and (3)

118. The most common generation in India is
(1) 11 kV  (2) 1.1 kV  (3) 66 kV  (4) 33 kV

119. To connect a number of single-phase consumers at 230 V, the secondary of three-phase transformer should be connected in
(1) Delta  (2) Star  (3) Open Delta  (4) Tee-Tee

120. High resistances are provided with a guard terminal. This guard terminal is used to
(1) bypass the leakage current
(2) guard the resistance against stray electrostatic field
(3) guard the resistance against overloads
(4) None of the above

121. N-channel type MOSFET is better than P-channel type MOSFET because
(1) it is faster  (2) it is TTL compatible
(3) it has better noise immunity  (4) it has better drive capability

122. Which of the following is the universal gate ?
(1) AND  (2) EX-OR  (3) OR  (4) NAND

SPACE FOR ROUGH WORK
123. Illumination of one lumen per square metre is called
   (1) lumen metre                  (2) lux
   (3) foot candle                  (4) candela

124. In a $3\frac{1}{2}$ digit voltmeter, the largest number that can be read is
   (1) 0999                        (2) 1999
   (3) 4999                        (4) 9999

125. A series R-L circuit is suddenly connected to a d.c. voltage source of V volts. The
     current in this circuit, soon after the switch is closed is equal to
     (1) zero                        (2) V/L
     (3) V/R                        (4) VL/R

126. Copper loss at full load in a transformer operating at unity power factor is 500 W. Then copper loss at full load and 0.95 power factor lagging will be
     (1) 475 W                      (2) 500 W
     (3) 525 W                      (4) None of the above

127. For a load flow solution the quantities normally specified at a voltage controlled bus
     are
     (1) P and Q                    (2) P and $|V|$  (3) Q and $|V|$  (4) P and $\delta$

128. Most efficient electrical distribution transformers are made with
     (1) Silicon alloyed iron cores (2) Amorphous metal cores
     (3) Iron core                  (4) None of the above

129. For successful parallel operation of two single-phase transformers, the essential
     condition is that their
     (1) percentage impedances should be equal
     (2) turns ratio should be exactly equal
     (3) polarities must be properly connected
     (4) KVA rating should be equal

130. The most economic load on an underground cable is
     (1) greater than its surge loading (2) less than surge loading
     (3) equal to surge loading       (4) None of the above is necessary

SPACE FOR ROUGH WORK
131. A 6-pole machine is rotating at a speed of 1200 rpm. This speed in mechanical rad. per sec. and electrical rad. per sec. is respectively
(1) $40\pi$, $40\pi/3$  (2) $120\pi$, $40\pi$  (3) $20\pi$, $60\pi$  (4) $40\pi$, $120\pi$

132. As compared to DOL starting, a cage induction motor with star-delta starting shall have
(1) more starting torque  (2) more starting current
(3) reduced starting current  (4) smooth acceleration

133. In order to have lower cost of electrical energy generation
(1) the load factor and diversity factor should be low
(2) the load factor should be low but diversity factor should be high
(3) the load factor should be high but diversity factor should be low
(4) the load factor and diversity factor should be high

134. The supply voltage $|V|$ in diagram below is

![Diagram](image)

(1) 210 V  (2) 70 V  (3) 50 V  (4) 230 V

135. The armature core of a d.c. machine is laminated to minimise
(1) Hysteresis loss  (2) Eddy current loss
(3) Mechanical loss  (4) Temperature rise

136. The residual magnetism of a self-excited d.c. generator is lost. To build up its emf again
(1) the field winding must be replaced
(2) the armature connection must be reversed
(3) the field winding connection must be reversed
(4) field winding must be excited by low voltage d.c. supply

SPACE FOR ROUGH WORK
137. The connected load of a consumer is 2 kW and his maximum demand is 1.5 kW. The load factor of the consumer is

(1) 0.75  
(2) 0.375
(3) 1.33  
(4) None of the above

138. A 3-phase synchronous motor, connected to an infinite bus, operates at a leading power factor. For constant load torque, if excitation is increased

(1) load angle $\delta$ and power factor angle $\Theta$ both decrease
(2) $\delta$ and $\Theta$ both increase
(3) $\delta$ increases but $\Theta$ decreases
(4) $\delta$ decreases but $\Theta$ increases

139. The power delivered to a three-phase load can be measured by the use of two wattmeters only when the

(1) load is unbalanced
(2) load is balanced
(3) 3-phase load is connected to source through 3-wires
(4) 3-phase load is connected to source through 4-wires

140. The back emf for a d.c. motor with $P$ poles, $Z$ conductors and running at $N$ rpm is given by

(1) $\frac{\phi Z P}{60 A}$  
(2) $\frac{P \phi N Z}{A}$
(3) $\frac{\phi Z N P}{60 A}$  
(4) $\frac{\phi Z N P}{60}$

141. Self GMD is used in the calculation of

(1) inductance only
(2) inductance and capacitance
(3) capacitance only
(4) None of the above

142. The impedance of a circuit is given by $Z = 3 + j4$. Its conductance is given by

(1) $\frac{1}{3}$  
(2) $\frac{3}{5}$
(3) $\frac{3}{25}$  
(4) $\frac{4}{5}$

143. Which one of the following is characteristic of an offset MHO relay?

(1) ![Option 1](image1.png)  
(2) ![Option 2](image2.png)
(3) ![Option 3](image3.png)  
(4) ![Option 4](image4.png)

SPACE FOR ROUGH WORK
144. Zero sequence currents does not exist in the following fault:

(1) L-G
(2) L-L
(3) L-L-G
(4) L-L-L-G

145. A thyristor has been fired by an appropriate gate pulse. When will it turn off?

(1) When applied voltage changes polarity
(2) When current through device falls below holding current
(3) When current through device falls below latching current
(4) When a gate pulse of opposite polarity applied

146. Steady state stability of a power system is improved by

(1) reducing fault clearing time
(2) using double circuit line instead of single circuit line
(3) single pole switching
(4) decreasing generator inertia

147. Hollow conductors are used in transmission lines to

(1) reduce weight of copper
(2) improve stability
(3) reduce corona
(4) increase power transmission capacity

148. The speed of a d.c. shunt motor is to be increased beyond its rated value. This can be achieved by

(1) inserting a resistance in armature circuit
(2) adding an external resistance in the field circuit
(3) applying a reduced voltage
(4) None of the above

149. The bus admittance matrix (Y-bus) of a power system is **not**

(1) symmetric
(2) a square matrix
(3) a full matrix
(4) generally having dominant diagonal elements

150. When a three-phase synchronous motor is under-excited, its power factor will be

(1) unity
(2) zero
(3) leading
(4) lagging
सूचना – (पृष्ठ 1 करन पुढे....)

(8) प्रसन्नपूर्वकीये विहित केलेल्या विशिष्ट जागीच कच्चे काम (रफे वर्क) करूने. प्रसन्नपूर्वकीये विहित उत्तरपत्रकेच किंवा इतर कार्यालय कच्चे काम केल्यास ते कॉफी कार्यालय उद्देशाने केल्यास आहे, असे मानते जाईल व ल्यानुसार उमेदवाराला शासनाने जाईल. केलेल्या “परीक्षासाठी होणारे गैंग्रेनकाराने प्रशिक्षण कार्याबाष्ट्रात अधिनियम-82” यातील तत्तुदीनुसार कार्यालय प्रेक्षा दोषी व्यवसायी कमाल एक वर्णनात्मक कारावासाच्या आणि/किंवा रूपात एक हाजर रक्मेच्या दंडाच्या शिलेसांस पात निर्माण होईल.

(9) सदर प्रसन्नपूर्वकीये आयोगाचे विहित केलेली वेळा संपत्त्यान्तर उमेदवाराला ही प्रसन्नपूर्वक स्वत: बंधूचे परीक्षाक्षेत्रासोहऱ्या वेळा नाम्न जागीच पर्याय होईल. मात्र परीक्षाक्षेत्रासोहऱ्या जागीच पर्याय होणारे उमेदवाराला आपल्या उत्तरपत्रकेचा भाग-1 समवेशाच्याकडे न विसरता पात करणे आवश्यक आहे.

नमुना प्रश्न

Pick out the correct word to fill in the blank :

Q. No. 201. I congratulate you __________ your grand success.

(1) for (2) at (3) on (4) about

हा प्रश्नाचे योग्य उत्तर “(3) on” असे आहे. त्यामुळे वा या प्रश्नाचे उत्तर “(3)’” होईल. यासाठी काहीतरीप्रमाणे प्र.क्र. 201 समवेशाच्या उत्तर-क्रमांक “(3)” हे वर्तुळ गूंगापणे छायाकाळ करून दाखविल्याचे आवश्यक आहे.

प्र.क्र. 201. ① ② ● ④

अशा पद्धतीने प्रसन्नपूर्वकीये प्रश्नकेच प्रश्नाच्या तुमच्या उत्तरक्रमांक हा तुम्हाला स्वतंत्रतेचा पुरविलेल्या उत्तरपत्रकेची वेळा ल्यानुसार प्रसन्नपूर्वकीये संस्थेच वर्तुळ गूंगापणे छायाकाळ करून दाखवाला. झालकरता फक्त काही शाईचे बॉलपेन वापरावे, पेन्सिल वा शाईचे पेन वापरू नये.

कच्च्या कामासाठी जागा / SPACE FOR ROUGH WORK