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प्रश्नपुस्तिका क्रमांक  
BOOKLET No.

1 0 4 1 6 9

### प्रश्नपुस्तिका

एकूण प्रश्न : 150

एकूण गुण : 150

वेळ : 1½ (दीड) तास

इंग्रजी व सामान्य अध्ययन

### सूचना

- (1) सदर प्रश्नपुस्तिकेत 150 अनिवार्य प्रश्न आहेत. उमेदवारांनी प्रश्नांची उत्तरे लिहिण्यास सुरुवात करण्यापूर्वी या प्रश्नपुस्तिकेत सर्व प्रश्न आहेत किंवा नाहीत याची खात्री करून घ्यावी. असा तसेच अन्य काही दोष आढळल्यास ही प्रश्नपुस्तिका समवेक्षकांकडून लगेच बदलून घ्यावी.
- (2) आपला परीक्षा-क्रमांक ह्या चौकोनात न विसरता बॉलपेनने लिहावा.
- (3) वर छापलेला प्रश्नपुस्तिका क्रमांक तुमच्या उत्तरपत्रिकेवर विशिष्ट जागी उत्तरपत्रिकेवरील सूचनेप्रमाणे न विसरता नमूद करावा.
- (4) या प्रश्नपुस्तिकेतील प्रत्येक प्रश्नाला 4 पर्यायी उत्तरे सुचविली असून त्यांना 1, 2, 3 आणि 4 असे क्रमांक दिलेले आहेत. त्या चार उत्तरांपैकी सर्वात योग्य उत्तराचा क्रमांक उत्तरपत्रिकेवरील सूचनेप्रमाणे तुमच्या उत्तरपत्रिकेवर नमूद करावा. अशा प्रकारे उत्तरपत्रिकेवर उत्तरक्रमांक नमूद करताना तो संबंधित प्रश्नक्रमांकासमोर छायांकित करून दर्शविला जाईल याची काळजी घ्यावी. ह्याकरिता फक्त काळ्या शाईचे बॉलपेन वापरावे, पेन्सिल वा शाईचे पेन वापरू नये.
- (5) सर्व प्रश्नांना समान गुण आहेत. यास्तव सर्व प्रश्नांची उत्तरे द्यावीत. घाईमुळे चुका होणार नाहीत याची दक्षता घेऊनच शक्य तितक्या वेगाने प्रश्न सोडवावेत. क्रमाने प्रश्न सोडविणे श्रेयस्कर आहे पण एखादा प्रश्न कठीण वाटल्यास त्यावर वेळ न घालविता पुढील प्रश्नाकडे वळावे. अशा प्रकारे शेवटच्या प्रश्नापर्यंत पोहोचल्यानंतर वेळ शिल्लक राहिल्यास कठीण म्हणून वगळलेल्या प्रश्नांकडे परतणे सोईस्कर ठरेल.
- (6) उत्तरपत्रिकेत एकदा नमूद केलेले उत्तर खोडता येणार नाही. नमूद केलेले उत्तर खोडून नव्याने उत्तर दिल्यास ते तपासले जाणार नाही.
- (7) प्रस्तुत परीक्षेच्या उत्तरपत्रिकांचे मूल्यांकन करताना उमेदवारांच्या उत्तरपत्रिकेतील योग्य उत्तरांनाच गुण दिले जातील. तसेच "उमेदवाराने वस्तुनिष्ठ बहुपर्यायी स्वरूपाच्या प्रश्नांची अचूक उत्तरेच उत्तरपत्रिकेत नमूद करावीत. अन्यथा त्यांच्या उत्तरपत्रिकेत सोडविलेल्या प्रत्येक चार चुकीच्या उत्तरांसाठी एका प्रश्नाचे गुण वजा करण्यात येतील".

### ताकीद

ह्या प्रश्नपत्रिकेसाठी आयोगाने विहित केलेली वेळ संपेपर्यंत ही प्रश्नपुस्तिका आयोगाची मालमत्ता असून ती परीक्षाकक्षात उमेदवाराला परीक्षेसाठी वापरण्यास देण्यात येत आहे. ही वेळ संपेपर्यंत सदर प्रश्नपुस्तिकेची प्रत/प्रती, किंवा सदर प्रश्नपुस्तिकेतील काही आशय कोणत्याही स्वरूपात प्रत्यक्ष वा अप्रत्यक्षपणे कोणत्याही व्यक्तीस पुरविणे, तसेच प्रसिद्ध करणे हा गुन्हा असून अशी कृती करणाऱ्या व्यक्तीवर शासनाने जारी केलेल्या "परीक्षांमध्ये होणाऱ्या गैरप्रकारांना प्रतिबंध करण्याबाबतचा अधिनियम-82" यातील तरतुदीनुसार तसेच प्रचलित कायद्याच्या तरतुदीनुसार कारवाई करण्यात येईल व दोषी व्यक्ती कमाल एक वर्षाच्या कारावासाच्या आणि/किंवा रुपये एक हजार रकमेच्या दंडाच्या शिक्षेस पात्र होईल.

तसेच ह्या प्रश्नपत्रिकेसाठी विहित केलेली वेळ संपण्याआधी ही प्रश्नपुस्तिका अनधिकृतपणे बाळगणे हा सुद्धा गुन्हा असून तसे करणारी व्यक्ती आयोगाच्या कर्मचारीवृंदापैकी, तसेच परीक्षेच्या पर्यवेक्षकीयवृंदापैकी असली तरीही अशा व्यक्तीविरुद्ध उक्त अधिनियमानुसार कारवाई करण्यात येईल व दोषी व्यक्ती शिक्षेस पात्र होईल.

पुढील सूचना प्रश्नपुस्तिकेच्या अंतिम पृष्ठावर पहा

पर्यवेक्षकांच्या सूचनेविना हे सील उघडू नये

कच्च्या कामासाठी जागा / SPACE FOR ROUGH WORK

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

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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

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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) generosity (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.

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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
- 
26. A \_\_\_\_\_ of ship.  
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.

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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
- 

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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.

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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.

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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.

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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
- 

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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 28<sup>th</sup> 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) 3<sup>rd</sup> June 1947 (2) 4<sup>th</sup> July 1947  
(3) 18<sup>th</sup> July 1947 (4) 15<sup>th</sup> August 1947
- 
57. From \_\_\_\_\_, the Panchayat Raj System is started in Maharashtra.  
(1) 5<sup>th</sup> March 1962 (2) 13<sup>th</sup> March 1962  
(3) 1<sup>st</sup> April 1962 (4) 1<sup>st</sup> May 1962
- 
58. Who amongst the following is known as 'Rashtrasant' ?  
(1) Baba Amte (2) Tukdoji Maharaj  
(3) Anna Hazare (4) Gadge Baba

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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
- 

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P.T.O.

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 |
- 

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83. In a parallel combination of four capacitors,  $10\ \mu\text{F}$ ,  $20\ \mu\text{F}$ ,  $30\ \mu\text{F}$  and  $40\ \mu\text{F}$ , the maximum current passes through  
(1)  $10\ \mu\text{F}$               (2)  $20\ \mu\text{F}$               (3)  $40\ \mu\text{F}$               (4)  $30\ \mu\text{F}$
- 
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)  $\pm 1\%$               (2)  $\pm 3\%$               (3)  $\pm 5\%$               (4)  $\pm 10\%$
- 
90. Minority carriers in p-type semiconductors are  
(1) free electrons                              (2) free holes  
(3) holes and electrons both                      (4) None of the above

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P.T.O.

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  $Z_S \gg Z_L$ , 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)  $415 \sin 314 t$  (2)  $415\sqrt{2} \sin 314 t$   
(3)  $415\sqrt{2} \sin 50 t$  (4)  $415 \sin 50 t$

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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  $90^\circ$   
(3) leading arc current by  $90^\circ$       (4) lagging arc current by  $180^\circ$
- 

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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)  $120^\circ$
  - (2)  $150^\circ$
  - (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
- 

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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
- 

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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
- 

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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)  $40\pi$ ,  $120\pi$
- 

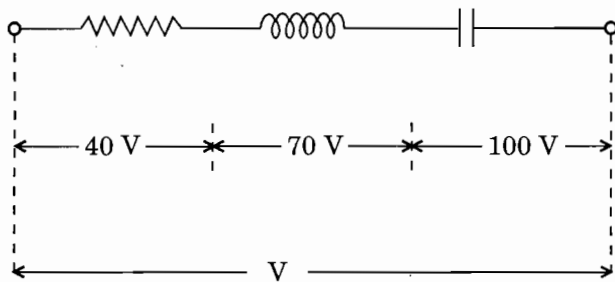
132. As compared to DOL starting, a cage induction motor with star-delta starting shall have

- (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



- (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
- 

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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)  (2)  (3)  (4) 

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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
- 

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## सूचना - (पृष्ठ 1 वरुन पुढे....)

- (8) प्रश्नपुस्तिकेमध्ये विहित केलेल्या विशिष्ट जागीच कच्चे काम (रफ वर्क) करावे. प्रश्नपुस्तिकेव्यतिरिक्त उत्तरपत्रिकेवर वा इतर कागदावर कच्चे काम केल्यास ते कॉपी करण्याच्या उद्देशाने केले आहे, असे मानले जाईल व त्यानुसार उमेदवारावर शासनाने जारी केलेल्या “परीक्षांमध्ये होणाऱ्या गैरप्रकारांना प्रतिबंध करण्याबाबतचे अधिनियम-82” यातील तरतुदीनुसार कारवाई करण्यात येईल व दोषी व्यक्ती कमाल एक वर्षाच्या कारावासाच्या आणि/किंवा रुपये एक हजार रकमेच्या दंडाच्या शिक्षेस पात्र होईल.
- (9) सदर प्रश्नपत्रिकेसाठी आयोगाने विहित केलेली वेळ संपल्यानंतर उमेदवाराला ही प्रश्नपुस्तिका स्वतः बरोबर परीक्षाकक्षाबाहेर घेऊन जाण्यास परवानगी आहे. मात्र परीक्षाकक्षाबाहेर जाण्यापूर्वी उमेदवाराने आपल्या उत्तरपत्रिकेचा भाग-1 समवेक्षकाकडे न विसरता परत 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

ह्या प्रश्नाचे योग्य उत्तर “(3) on” असे आहे. त्यामुळे या प्रश्नाचे उत्तर “(3)” होईल. यास्तव खालीलप्रमाणे प्र.क्र. 201 समोरील उत्तर-क्रमांक “③” हे वर्तुळ पूर्णपणे छायांकित करून दाखविणे आवश्यक आहे.

प्र.क्र. 201.    ①            ②            ●            ④

अशा पद्धतीने प्रस्तुत प्रश्नपुस्तिकेतील प्रत्येक प्रश्नाचा तुमचा उत्तरक्रमांक हा तुम्हाला स्वतंत्ररीत्या पुरविलेल्या उत्तरपत्रिकेवरील त्या त्या प्रश्नक्रमांकासमोरील संबंधित वर्तुळ पूर्णपणे छायांकित करून दाखवावा. ह्याकरिता फक्त काळ्या शाईचे बॉलपेन वापरावे, पेन्सिल वा शाईचे पेन वापरू नये.

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