

परीक्षा दि. १४-११-२०१०

Code

प्रश्नपुस्तिका क्रमांक

BOOKLET No.

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प्रश्नपुस्तिका

वेळ : १ (एक) तास

चाळणी परीक्षा/SCREENING TEST

एकूण प्रश्न : १००

एकूण गुण : १००

सूचना

- (१) सदर प्रश्नपुस्तिकेत १०० 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.
- (२) आपला परीक्षा-क्रमांक ह्या चौकोनांत न विसरता बॉलपेनने लिहावा.
- (३) वर छापलेला प्रश्नपुस्तिका क्रमांक तुमच्या उत्तरपत्रिकेवर विशिष्ट जागी उत्तरपत्रिकेवरील सूचनेप्रमाणे न विसरता नमूद करावा.
- (४) या प्रश्नपुस्तिकेतील प्रत्येक प्रश्नाला ४ पर्यायी उत्तरे सुचविली असून त्यांना १, २, ३ आणि ४ 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.
- (५) 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.
- (६) उत्तरपत्रिकेत एकदा नमूद केलेले उत्तर खोडता येणार नाही. नमूद केलेले उत्तर खोडून नव्याने उत्तर दिल्यास ते तपासले जाणार नाही.
- (७) 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-८२" 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

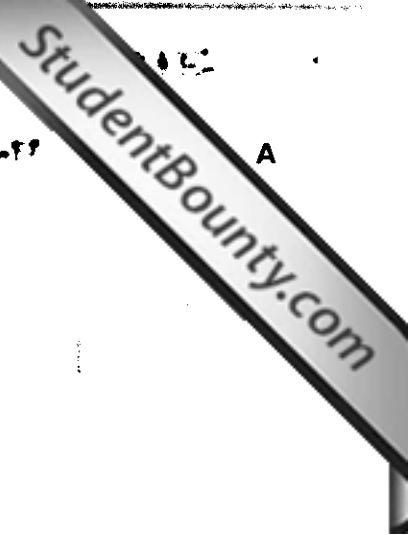
गणित विभाग - 315, कक्षा 2, कनिष्ठ

KLT

2 - 2018-19 गणित

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कच्च्या कामासाठी जागा



A 3

1. The molar concentration of a solution of chemical species is the number of moles of that species that is present in
- (1) one litre of the solvent (2) one cm^3 of the solution
(3) one cm^3 of the solvent (4) one litre of the solution
-
2. Concentration in ppb is the
- (1) $\frac{\text{mass of solute}}{\text{mass of solution}} \times 10^6$ (2) $\frac{\text{mass of solute}}{\text{mass of solution}} \times 10^9$
(3) $\frac{\text{mass of solute}}{\text{mass of solution}} \times 10^3$ (4) $\frac{\text{mass of solute}}{\text{mass of solvent}} \times 10^9$
-
3. The molarity of a $\text{K}_3\text{Fe}(\text{CN})_6$ solution that contains 63.3 ppm of $\text{K}_3\text{Fe}(\text{CN})_6$ (329.3 gm/mol) is
- (1) 0.1922 M (2) 5.2022 M
(3) 1.922×10^{-4} M (4) 1.922 M
-
4. 2 M Sulphuric acid solution is equivalent to
- (1) 1 N H_2SO_4 (2) 2 N H_2SO_4 (3) 6 N H_2SO_4 (4) 4 N H_2SO_4
-
5. Crystalline precipitate should ordinarily be digested for longer duration on steambath in order to avoid the problem of
- (1) Co-precipitation
(2) Post precipitation
(3) Co-precipitation and post precipitation both
(4) Dissolution of the precipitate
-
6. _____ is the closeness of measurement to other measurement made in exactly the same way.
- (1) Precision (2) Accuracy (3) Deviation (4) Error
-
7. The boundaries of confidence interval are called
- (1) Significance limit (2) Confidence limits
(3) Confidence range (4) Significance level
-
8. The chemical analysis is affected by at least _____ types of errors.
- (1) indeterminate (2) determinate
(3) None of these (4) All of these

SPACE FOR ROUGH WORK

P.T.O.

9. Mohr's method is used for estimation of
- (1) Nitrate ions (2) Chloride ions
(3) Fluorine ions (4) Sulphate ions
-
10. Non-aqueous ionizing solvents can sometimes be used in acidimetry and alkalimetry. In which one can the solvent encourage the loss of proton from a weak acid making it effectively much stronger ?
- (1) Polar solvent (2) Non-polar solvent
(3) Acidic solvent (4) Basic solvent
-
11. The following indicator solution is called as adsorption indicator :
- (1) Tartrazine (2) Fluorescein
(3) Methyl red (4) None of the above
-
12. Primary standard solution should contain a substance which is
- (1) highly pure (2) stable in air
(3) more soluble in water (4) All of the above
-
13. If the precipitate is a salt of weak acid and strong base and is slightly soluble, it may exhibit a tendency to hydrolyse and the soluble product of hydrolysis will be a
- (1) base (2) acid
(3) neutral (4) polar
-
14. Washing of precipitate in gravimetric analysis is more advantageous if precipitate is washed with given amount of solvent with
- (1) more amount of solvent each time but less number of washing
(2) less amount of solvent each time but more number of washing
(3) one washing with all the solvent
(4) None of the above
-
15. The contamination of the precipitate by substances, which are normally soluble in the mother liquor is referred to as
- (1) Digestion (2) Coagulation
(3) Precipitation (4) Co-precipitation
-
16. Occlusion means
- (1) slow precipitation
(2) crystal formation
(3) precipitate settles down
(4) a compound is trapped within a pocket formed during rapid crystal growth
-

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17. PPM_A may be expressed as
- (1) $(\text{mass of A}/\text{mass of solution}) \times 10^6$
 - (2) $(\text{mass of A}/\text{mass of solution}) \times 10^{-6}$
 - (3) $(\text{mass of A}/\text{mass of solvent}) \times 10^6$
 - (4) $(\text{mass of A}/\text{mass of solvent}) \times 10^{-6}$
-
18. The solubility product of AgCl and AgI are 1.2×10^{-10} and 1.7×10^{-16} . When silver nitrate solution is added in solution containing nitrate, chloride and iodide ion, which salt will be precipitated first ?
- (1) Silver chloride
 - (2) Silver iodide
 - (3) Silver nitrate
 - (4) All of the above
-
19. An assay is a process of determination of
- (1) % error
 - (2) % of sample
 - (3) how much of given sample is the material indicated by its name
 - (4) None of the above
-
20. The best indicator for titration of HCl with NH_4OH is
- (1) Diphenylamine
 - (2) Methyl orange
 - (3) Phenol red
 - (4) Phenolphthalein
-
21. Metalochrome indicators are
- (1) strong acids
 - (2) strong bases
 - (3) weak acids
 - (4) weak bases
-
22. How many grams of $KMnO_4$ will be required to prepare 1000 cm^3 of 1 N solution ? (M. wt. of $KMnO_4 = 158$)
- (1) 31.6 g
 - (2) 158.0 g
 - (3) 69.0 g
 - (4) 15.8 g
-
23. The indicator Eriochrome Black T is red in the pH range
- (1) 4.7 to 6.7
 - (2) 7.7 to 10.8
 - (3) 11.2 to 12.4
 - (4) 12.7 to 13.2
-
24. In replicate analysis of a metal ore the following results were obtained :
- | Sample No. | 1 | 2 | 3 | 4 | 5 | 6 |
|------------|-------|-------|-------|-------|-------|-------|
| % of metal | 55.13 | 55.16 | 55.14 | 55.15 | 55.17 | 55.15 |
- Hence the mean is
- (1) 55.17
 - (2) 55.13
 - (3) 55.14
 - (4) 55.15

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P.T.O.

25. When large excess of SnCl_2 is added to HgCl_2 solution, the substance formed is
- (1) Hg_2Cl_2 (2) Sn
(3) Hg (4) None of the above
-
26. The region between _____ is known as quartz region.
- (1) 150 nm to 300 nm (2) 150 nm to 380 nm
(3) 200 nm to 380 nm (4) 200 nm to 300 nm
-
27. In AAS nitrous oxide acetylene flame is preferred to produce ground state atoms for those elements which are
- (1) d-block elements (2) form more refractory compounds
(3) for mercury (4) for f-block elements
-
28. In AAS the ratio of the number of atoms to the total number of analyte species, atoms, ions and molecules in the flame is always
- (1) one (2) one or less than one
(3) infinity (4) depend on mist
-
29. In the spectrophotometry titration of a copper ion solution with EDTA may be carried out at a wavelength of _____ nm.
- (1) 420 (2) 470 (3) 560 (4) 745
-
30. The sensitivity of AAS is higher than flame emission spectroscopy because
- (1) flame emission spectroscopy obeys Beer-Lambert's law at only very low concentration
(2) AAS depends on the absorption of radiation by atoms in ground state
(3) in FES number of atoms in excited state is higher than ground state
(4) reasons recorded in (2) and (3)
-
31. UV-visible spectra of condensed systems are useful as
- (1) vacuum region (2) far region
(3) fingerprint region (4) large region
-
32. In spectrophotometers the intensity of transmitted light is determined by
- (1) photoelectric cell (2) tungsten lamp
(3) monochromator (4) amplifier

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33. In electrogravimetric methods platinum electrodes are generally used because
- (1) they are relatively reactive
 - (2) they are relatively non-reactive
 - (3) their current density increases
 - (4) their current density decreases
-
34. The emission of radiation of a single wavelength corresponding to a definite energy transition is known as
- (1) spectral lines
 - (2) band lines
 - (3) line reversal
 - (4) discrete spectral lines
-
35. Which is made up of a series of closely spaced lines and is due to molecular species in the vapour state ?
- (1) Line spectra
 - (2) Band spectra
 - (3) Emission spectra
 - (4) Absorption spectra
-
36. An indifferent electrolyte used in direct current polarography means
- (1) which neither conducts current nor reacts with material under investigation and electrode
 - (2) which conducts current but does not react with electrode and material
 - (3) which does not conduct current but reacts with electrode
 - (4) which does not conduct current but reacts with material under investigation
-
37. According to Ilkovic, the diffusion current I_d depends upon
- (1) temperature
 - (2) viscosity of the medium and molecular or ionic state of active species
 - (3) the dimension of the capillary and pressure of dropping mercury
 - (4) All of the above
-
38. The diffusion current is proportional to
- (1) decomposition potential
 - (2) residual current
 - (3) concentration of electrolytic solution
 - (4) concentration of electro-active material present in the solution
-
39. In Amphoteric titration of an iodide solution with mercury (II) nitrate solution, the magnitude of the anodic diffusion current
- (1) decreases upto the end point
 - (2) till all the active material is reduced
 - (3) increases as the titration proceeds
 - (4) reaches to its maximum

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P.T.O.

40. In stripping voltammetry during electrolysis certain process gives rise to _____ which form an insoluble salt with Hg (I) ions. In the subsequent process, the voltage scan must be in the negative direction and so that procedure is referred to as _____
- (1) anodic stripping voltammetry
 - (2) cathodic stripping voltammetry
 - (3) dropping mercury voltammetry
 - (4) None of the above
-
41. In stripping voltammetry the rate of amalgam formation is governed by the _____
- (1) magnitude of the current flowing
 - (2) concentration of reducible ions
 - (3) rate at which the ions travel to the electrode
 - (4) All of the above
-
42. An electron beam passing through an evacuated region can be focused by means of _____
- (1) magnetic field
 - (2) electric field
 - (3) magnetic field or electric field
 - (4) None of the above
-
43. The instruments required for the following techniques are closely related to microscopy :
- (1) Electron diffraction
 - (2) X-ray projection microscopy
 - (3) X-ray microprobe analyser
 - (4) All of the above
-
44. In electrogravimetry good metallic deposits are _____
- (1) Spongy
 - (2) Fine grained
 - (3) Powdery
 - (4) Flaky
-
45. The strongest absorption for dienes, polyenes, aldehydes and ketones result from _____ electronic transitions.
- (1) $\sigma \rightarrow \sigma^*$
 - (2) $\sigma \rightarrow \pi^*$
 - (3) $\pi \rightarrow \pi^*$
 - (4) $n \rightarrow \pi^*$
-
46. Cyclohexanone exhibits only _____ peaks in its ^{13}C NMR spectrum due to symmetry.
- (1) Two
 - (2) Four
 - (3) Three
 - (4) Five

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47. In flame emission, the intensity of emission is critically dependent upon
- (1) the rate at which the sample is introduced
 - (2) the nature of the sample
 - (3) the state of the sample
 - (4) None of the above
-
48. In cyclic voltammetry, a cyclic voltammogram for a chemically reversible system shows
- (1) equal peak heights for reduction and oxidation processes
 - (2) unequal peak heights for reduction and oxidation processes
 - (3) no peak heights
 - (4) broader peaks
-
49. Amperometric titrations cannot be carried out at potentials more negative than 2 volts since
- | | |
|-------------------------|-------------------------|
| (1) Nitrogen is evolved | (2) Hydrogen is evolved |
| (3) Oxygen is evolved | (4) None is evolved |
-
50. The GLC is limited to
- | | |
|-------------------------|----------------------------|
| (1) Non-polar materials | (2) Polar materials |
| (3) Volatile materials | (4) Non-volatile materials |
-
51. In Raman spectra the middle line is called as
- | | |
|--------------------|----------------------------|
| (1) Raman lines | (2) Functional group lines |
| (3) Rayleigh lines | (4) Peak lines |
-
52. In IR spectra fingerprint region is from
- | | |
|--|--|
| (1) 1500 cm^{-1} to 1000 cm^{-1} | (2) 1300 cm^{-1} to 667 cm^{-1} |
| (3) 1400 cm^{-1} to 1100 cm^{-1} | (4) 5000 cm^{-1} to 1300 cm^{-1} |
-
53. If an organic compound does not absorb UV-visible radiation, it means that compound does not contain
- | | |
|----------------------------|-----------------|
| (1) Single bond | (2) Sigma bond |
| (3) Conjugated double bond | (4) Dative bond |
-

SPACE FOR ROUGH WORK

P.T.O.

54. The liquid mixtures, having distillation with a change in composition
- (1) non-equilibrium mixtures (2) azeotropic mixtures
(3) zeotropic mixtures (4) fractional distillation
-
55. Paper treated with silicone or paraffin oil permits _____ paper chromatography
- (1) reversed phase (2) chemical phase
(3) physical phase (4) normal phase
-
56. The Raman shift depends upon
- (1) frequency of the incident light (2) frequency of the scattered light
(3) frequency of the Raman lines (4) None of the above
-
57. The characteristics of lines observed in Raman effect is
- (1) the intensity of Stokes line is always greater than the corresponding anti-Stokes lines
(2) Raman shift lies within the far and near IR regions of the spectrum
(3) they are symmetrically displaced about the parent lines
(4) All of the above
-
58. Intensity of Raman peak depends upon
- (1) Polarizability of the molecule (2) Intensity of the source
(3) Concentration of the active group (4) All of the above
-
59. The efficiency of fractionating column of distillation is expressed in terms of HETP and usually stated in
- (1) mm (2) cm^2 (3) cm (4) m^2
-
60. In chromatography, the ratio of distance travelled by the substance and standard substance from the origin is expressed in terms of
- (1) R_M (2) R_F (3) R_X (4) R_S
-
61. Generally a solvent or solvent mixture selected as paper developing solvent which can give R_F value in the range of
- (1) 0.2 – 0.8 (2) 0.0 – 0.5
(3) 0.01 – 0.05 (4) 0.02 – 0.2

SPACE FOR ROUGH WORK

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62. In two-component chromatogram of chromatography, separation can be improved by
- (1) increasing the rate of band separation
 - (2) decreasing the rate of band spreading
 - (3) overlapping of peaks
 - (4) All of the above
-
63. The time between sample injection and the appearance of detection of peak in chromatogram is sometimes called
- (1) Retention time
 - (2) Migration time
 - (3) Dead time
 - (4) Distribution constant
-
64. In chromatographic separation, a process in which species migrate from a more concentrated part of a medium to a more dilute region is known as
- (1) Migration
 - (2) Dispersion
 - (3) Diffusion
 - (4) Extraction
-
65. In chromatography when the stationary phase is immobilized liquid, the mass-transfer coefficient is
- (1) directly proportional to square of the film on support particles
 - (2) directly proportional to the concentration of solute injected
 - (3) inversely proportional to square of thickness of the solute in the film
 - (4) None of the above
-
66. In gas chromatography the detector widely used to detect halogenated compound is
- (1) Flame ionization detector
 - (2) Electron capture detector
 - (3) Thermionic detector
 - (4) Photoionization detector
-
67. In Raman spectroscopy the wave number of Stokes line is
- (1) $\Delta\nu = \nu_i - \nu_s$
 - (2) $\overline{\Delta\nu} = \overline{\nu_s} - \overline{\nu_i}$
 - (3) $\overline{\Delta\nu} = \overline{\nu_i} - \overline{\nu_s}$
 - (4) $\overline{\Delta\nu} = \overline{\nu_i} + \overline{\nu_s}$
-
68. The process of locating analytes on a thin layer plate is often termed as
- (1) Mobilization
 - (2) Visualization
 - (3) Normalization
 - (4) None of the above
-

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P.T.O.

69. Exhaustive extractions can be performed with a _____ extractor.
(1) simple (2) fractional
(3) soxhlet (4) counter current
-
70. In _____ chromatography analyte species are adsorbed into the surface of a polar packing.
(1) absorption (2) adsorption (3) ion-exchange (4) paper
-
71. Thin layer chromatography is based on
(1) absorption (2) adsorption
(3) solubility (4) fractional distillation
-
72. In a mass spectrometer an organic compound is bombarded with electrons of about _____ energy.
(1) 65 eV (2) 70 eV (3) 75 eV (4) 60 eV
-
73. Scanning Electron Microscopy (SEM) provides morphologic and topographic information about
(1) the surface of liquid (2) the surface of solid
(3) the surface of gas (4) None of the above
-
74. Efficiency of a column in fractional distillation can be increased by increasing
(1) number of bulbs in the column (2) length of the column
(3) width of the column (4) All of the above
-
75. In paper chromatography stationary phase and mobile phase are
(1) liquid – liquid (2) liquid – solid
(3) liquid – gas (4) solid – gas
-
76. One millimolar solution (1 mM) is equivalent to
(1) 1 μ mol/ml (2) 1 μ mol/l (3) 1 μ mol/dl (4) 1 m mol/dl
-
77. Widely used buffer for separation of proteins and other biological substances is
(1) Phosphate buffer (2) Tris-Borate buffer with EDTA
(3) Cacodylate buffer (4) Piperazine buffer

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78. Separation of proteins by isoelectric focussing technique depends on which of the following factors ?
- (1) Charge (2) PI (3) Size (4) Solubility
-
79. Universal blood donors have in their blood
- (1) no antigenic determinants on RBC and both Anti A and Anti B in plasma
(2) both antigenic determinants on RBC and no antibodies in plasma
(3) no antigenic determinants on RBC and no antibodies in plasma
(4) both A and B antigenic determinants on RBC and both Anti A and Anti B in plasma
-
80. A ligand (hormone) for a receptor of interest is chemically linked to polystyrene beads. After affinity elution which of the following are you expected to collect ?
- (1) Molecules of hormone (2) Molecules of purified receptors
(3) Hormone-receptor complex (4) Assorted membrane receptors
-
81. Our body has many systems for cellular defence. Which of the following enzymes protect us against reactive oxygen species ?
- (1) Xanthine oxidase (2) Mono oxygenase
(3) Dioxygenase (4) Superoxide dismutase
-
82. The DNA-polymerase used in PCR for amplification of DNA fragments is specifically obtained from
- (1) Escherichia coli (2) Thermus aquaticus
(3) Hemophilus influenzae Rd (4) Mammalian DNA-pol-alpha
-
83. How much stock solution of glucose (0.1 M) will you require to prepare 10 ml solution of 1 mM glucose concentration ? [Mol. wt. of glucose is 180]
- (1) 1 ml (2) 0.1 ml (3) 0.01 ml (4) 0.001 ml
-
84. If Hill co-efficient of an enzyme is found to be 1.0, the enzyme manifests
- (1) positive substrate cooperativity
(2) negative substrate cooperativity
(3) both types of substrate cooperativity
(4) no cooperativity

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85. Libermann-Burchard test is performed to detect
- (1) Cholesterol (2) Triglycerides
(3) Fatty acids (4) Glycerol
-
86. A positive Seliwanoff's test is obtained with
- (1) Glucose (2) Fructose (3) Galactose (4) Mannose
-
87. Polymerase Chain Reaction (PCR) is useful for
- (1) cutting DNA into fragments (2) creating recombinant plasmids
(3) analysing person's fingerprinting (4) making many copies of DNA
-
88. The electrophoresis technique that separates amphoteric compounds like proteins in a medium possessing a stable pH gradient is called
- (1) SDS-PAGE (2) Isotachopheresis
(3) Iso-electric focussing (4) High voltage electrophoresis
-
89. Age and rancidity of oil can be determined by method of
- (1) Iodine number (2) Benedict test
(3) Acid value (4) Salkowski test
-
90. The fractional range of matrix for gel filtration is 1000 to 100,000. Those proteins that will not be separated by this bed will
- (1) penetrate beads completely (2) elute in void vol
(3) not penetrate beads at all (4) All of the above
-
91. The pore size of polyacrylamide gel can be controlled by the concentration of
- (1) acrylamide (2) bis-acrylamide
(3) TEMED (4) acrylamide and bisacrylamide
-
92. Diphenylamine method is employed in the quantification of
- (1) DNA (2) RNA (3) Proteins (4) Carbohydrates
-
93. An allosteric modulator influences enzyme activity by
- (1) competing for the catalytic site with the substrate
(2) binding to a site distinct from catalytic site
(3) changing the nature of products formed
(4) covalently modifying enzyme

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94. Restriction Fragment Length Polymorphism (RFLP) technique is useful for which of the following ?

- (1) Isolation of genes with known location and function
 - (2) Providing DNA for PCR analysis
 - (3) Prenatal diagnosis of certain genetic defects
 - (4) Increasing the small quantity of DNA available for further analysis
-

95. Restriction enzymes widely used in genetic engineering, belong to one of the following classes :

- (1) Oxidoreductase
 - (2) Transferase
 - (3) Hydrolase
 - (4) Lyase
-

96. Which of the following is *not* true for cDNA ?

- (1) It lacks exons
 - (2) Used for reproducing eukaryotic genome in prokaryotes
 - (3) Produced by reverse transcriptase
 - (4) Lacks regulatory elements of gene
-

97. Method that uses Coomassie Brilliant Blue dye for protein estimation is

- (1) Lowry method
 - (2) Kjeldahl method
 - (3) Bradford's method
 - (4) Biuret method
-

98. The DNA polymerase that has both, the polymerisation and the 'primase' activity is

- (1) Prokaryotic DNA pol-I
 - (2) Prokaryotic DNA pol-III
 - (3) Eukaryotic DNA pol-alpha
 - (4) Eukaryotic DNA pol-delta
-

99. The antigenic determinant saccharide on the erythrocytes of blood group 'A' individuals is

- (1) N-acetyl Galactose amine
 - (2) N-acetyl Glucose amine
 - (3) D-Galactose
 - (4) D-Mannose
-

100. For radioimmuno assay radioisotopes that are generally used are

- (1) ^{131}I
 - (2) ^{125}I
 - (3) ^3H
 - (4) All of the above
-

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सूचना - (पृष्ठ 1 वरून 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

Q. No. 201. The Catch varies inversely with the size of the :

- (1) nozzle (2) droplet (3) obstruction (4) sprayer

ह्या प्रश्नाचे योग्य उत्तर “(3) obstruction” हे आहे. त्यामुळे या प्रश्नाचे उत्तर “(3)” होईल, आता खालीलप्रमाणे प्र.क्र. 201 समोरील उत्तर-क्रमांक “③” चा कंस खालीलप्रमाणे 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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