JAMMU AND KASHMIR PUBLIC SERVICE COMMISSION

RESHAM GHAR COLONY, BAKSHI NAGAR, JAMMU - 180016

Website: http://jkpsc.nic.in Jammu: 0191-2566533

Subject: Written Examination for the posts of Lecturer(s) [Sociology and Mathematics] in the School Education Department - Provisional Answer Key(s) thereof.

Notification No. PSC/Exam/S/2025/42
Dated: 11.10.2025

In pursuance of Rule 10(c) of the Jammu & Kashmir Public Service Commission (Conduct of Examination) Rules, 2022, as amended upto date, the Provisional Answer Keys of Question Papers pertaining to the written examinations for the posts of **Lecturer(s) [Sociology and Mathematics] in School Education Department,** held on **11.10.2025,** are hereby notified for seeking the objections from candidates.

Provisional Answer Key

(Sociology)

Test Booklet Question No. (Series A)	
Q1	B
Q2	C
Q3	B
Q4	B
Q5	A
Q6	A
Q7	B
Q8	C
Q9	C
Q10	D
Q11	C

Test Booklet Question No. (Series A)	
Q12	C
Q13	A
Q14	B
Q15	D
Q16	C
Q17	A
Q18	C
Q19	C
Q20	B
Q21	C
Q22	B

Test Booklet Question No. (Series A)	
Q23	B
Q24	B
Q25	C
Q26	A
Q27	A
Q28	B
Q29	C
Q30	B
Q31	D
Q32	A
Q33	A

Test Booklet Question No. (Series A)	
Q34	C
Q35	B
Q36	C
Q37	C
Q38	A
Q39	A
Q40	A
Q41	D
Q42	C
Q43	C
Q44	B
Q45	C
Q46	C
Q47	A
Q48	B
Q49	B
Q50	B
Q51	C
Q52	B
Q53	B
Q54	B
Q55	C
Q56	A

Test Booklet Question No. (Series A)	
Q57	C
Q58	C
Q59	C
Q60	A
Q61	B
Q62	A
Q63	B
Q64	A
Q65	B
Q66	A
Q67	B
Q68	A
Q69	A
Q70	D
Q71	A
Q72	B
Q73	C
Q74	A
Q75	B
Q76	A
Q77	A
Q78	C
Q79	A

Test Booklet Question No. (Series A)	
Q80	A
Q81	A
Q82	B
Q83	D
Q84	B
Q85	B
Q86	A
Q87	B
Q88	B
Q89	A
Q90	D
Q91	A
Q92	B
Q93	B
Q94	A
Q95	A
Q96	D
Q97	A
Q98	A
Q99	D
Q100	B

Provisional Answer Key

(Mathematics)

Test Booklet Question No. (Series A)	
Q1	D
Q2	B
Q3	A
Q4	C
Q5	D
Q6	B
Q7	C
Q8	B
Q9	D
Q10	C
Q11	B
Q12	A
Q13	C
Q14	A
Q15	B
Q16	A
Q17	B
Q18	D
Q19	B
Q20	B
Q21	C
Q22	B
Q23	D
Q24	B
Q25	A
Q26	A
Q27	B
Q28	B
Q29	A
Q30	A
Q31	D
Q32	A
Q33	B
Q34	A

Test Booklet Question No. (Series A)	
Q35	B
Q36	C
Q37	D
Q38	C
Q39	B
Q40	C
Q41	A
Q42	A
Q43	C
Q44	A
Q45	B
Q46	C
Q47	A
Q48	C
Q49	A
Q50	C
Q51	A
Q52	C
Q53	D
Q54	B
Q55	C
Q56	B
Q57	A
Q58	C
Q59	A
Q60	B
Q61	C
Q62	A
Q63	A
Q64	D
Q65	C
Q66	B
Q67	D
Q68	A

Test Booklet Question No. (Series A)	
Q69	B
Q70	B
Q71	A
Q72	A
Q73	B
Q74	C
Q75	B
Q76	D
Q77	B
Q78	C
Q79	A
Q80	B
Q81	C
Q82	D
Q83	C
Q84	B
Q85	C
Q86	A
Q87	C
Q88	B
Q89	A
Q90	D
Q91	C
Q92	D
Q93	B
Q94	A
Q95	A
Q96	B
Q97	B
Q98	A
Q99	D
Q100	C

The candidates are advised to refer to **Question Booklet (Series A)** to match the corresponding question(s) in their respective Question Booklet Series and if any candidate feels that the key to any of the question(s) is/are wrong, he/she may represent on prescribed format/proforma annexed as **Annexure-A** along with the documentary proof/evidence **(hard copies only)** and fee of Rs.500/- per question in the form of Demand Draft drawn in favour of **COE, J&K PSC** (refundable in case of genuine/correct representation) to the Controller of Examinations, Jammu & Kashmir Public Service Commission, from Monday i.e. 13.10.2025 to 15.10.2025. **The candidates are further advised to clearly mention the question(s) objected to with reference to its serial number as it appears in the Question Booklet of Series A of the provisional answer key(s).**

Any objection/application not accompanied by the requisite Demand Draft of Rs.500/- as prescribed, shall not be considered/entertained under any circumstances. Candidates are, in their own interest, advised to adhere to these instructions and not submit any objection unaccompanied by the Demand Draft as required under extant rules. The Commission shall not entertain any such representation(s) after the expiry of the stipulated period i.e. after 15.10.2025 (Wednesday), 05.00 pm.

Further, objection(s) submitted in any other mode will not be entertained.

The provisional answer key(s) are also available on the website of the Commission http://www.jkpsc.nic.in.

11/X/25

(Sachin Jamwal) JKAS
Controller of Examinations
J&K Public Service Commission

No. PSC/Ex-Secy/2025/27 Dated: 11.10.2025

Copy to the: -

1. Director, Information and Public Relations, J&K for publication of the notice in all leading newspapers published from Jammu/Srinagar.
2. P.S. to Hon'ble Chairman, J&K Public Service Commission for information of the Hon'ble Chairman.
3. P.S. to Hon'ble Member, Shri _____ for information of the Hon'ble Member.
4. P. A. to Secretary, J&K Public Service Commission for information of the Secretary.
5. Main file/Stock file/Notice Board.

Annexure-A

Representation regarding objection(s) to any Question/Answer pertaining to the Written Examination conducted for the posts of Lecturer(s) [Sociology and Mathematics] in School Education Department held on 11.10.2025

(NOTE: USE SEPARATE FORMS FOR SEPARATE QUESTIONS)

Discipline: _____

Name of the Applicant: _____

Roll No. : _____

Correspondence Address : _____

Contact/Mobile No. : _____

Date of Application: _____.10.2025

Demand Draft Details: No._____Date_____ Amount_____

Candidates Account No.(16 digit) & IFSC Code :_____

_____

Question No. in Series A	Details of the Objection	Resource Material (copy to be enclosed)	Details of the Website (if any)
Correct Answer/Option as per candidate :			

Signature of the Candidate

Note : Application for each question/answer shall be made on separate page in the given format, otherwise the first question entered in the format shall only be considered.

DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE TOLD TO DO SO

Booklet Serial No. 332213

Test Booklet Series

TEST BOOKLET
LECTURER - (10+2)
SOCIOLOGY
WRITTEN TEST - 2025
(71)

A

Time Allowed: Two Hours ***Maximum Marks: 100***

INSTRUCTIONS

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS TEST BOOKLET ***DOES NOT*** HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS, ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.
2. **Please note that it is the candidate's responsibility to encode and fill in the Roll Number and Test Booklet Series Code A, B, C or D carefully and without any omission or discrepancy at the appropriate places in the OMR Answer /Response Sheet. Any omission/discrepancy will render the Response Sheet liable for rejection.**
3. You have to enter your Roll Number on the Test Booklet in the Box provided alongside. ***DO NOT*** **write** ***anything else*** on the Test Booklet.
4. This Test booklet contains **100** items (questions). Each item comprises of four responses (answers). You will select the response which you want to mark on the Answer Sheet/Response Sheet. In case you feel that there is more than one correct response, mark the response which you consider the best. In any case, choose ***ONLY ONE*** response for each item.
5. You have to mark all your responses ***ONLY*** on the separate Answer /Response Sheet provided. *See directions in the Response Sheet.*
6. ***All*** items carry equal marks.
7. Before you proceed to mark in the Answer /Response Sheet, the response to various items in the Test Booklet, you have to fill in some particulars in the Answer /Response Sheet as per instructions sent to you with your Admission Certificate.
8. After you have completed filling in all your responses on the Response Sheet and the examination has concluded, you should hand over to the Invigilator ***only the Answer /Response Sheet***. You are permitted to take away with you the Test Booklet and ***Candidate's Copy of the Response Sheet .***
9. Sheets for rough work are appended in the Test Booklet at the end.
10. While writing Centre, Subject and Roll No. on the top of the Answer Sheet/Response Sheet in appropriate boxes use **"ONLY BALL POINT PEN".**
11. **Penalty for wrong answers:**

    THERE WILL BE PENALTY FOR WRONG ANSWERS MARKED BY THE CANDIDATE IN THE WRITTEN TEST (OBJECTIVE TYPE QUESTIONS PAPERS).

    (i) There are four alternatives for the answer to every question. For each question for which a wrong answer has been given by the candidate, **(0.25)** of the marks assigned to that question will be deducted as penalty.

    (ii) If a candidate gives more than one answer, it will be treated as a **wrong answer** even if one of the given answers happens to be correct and there will be same penalty as above for that question.

    (iii) If a question is left blank, i.e., no answer is given by the candidate, there will be **no penalty** for that question.

DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE TOLD TO DO SO

1. Who coined the term 'Gemeinschaft'?

   A) Anthony Giddens

   B) F. Tonnies

   C) Max Weber

   D) MacIver and Page

2. Who argued that the development of the industrial city in the 19th century created individualism?

   A) Robert E Park

   B) T.Veblen

   C) George Simmel

   D) August Comte

3. Durkheim argues that sociologists should study social facts as if they were "things." What does he mean by this methodological principle?

   A) Sociologists should treat social facts as material objects that can be physically manipulated.

   B) Sociologists should approach social facts with an objective, external attitude, stripping away preconceptions and subjective biases.

   C) Sociologists should prioritize the study of material culture over non-material aspects of society.

   D) Sociologists should only study static, unchanging aspects of society.

4. Durkheim posits that a social phenomenon is "normal" when it is:

   A) Universal across all known societies.

   B) Widely diffused within a given society and generally useful.

   C) Considered morally good by the majority of the population.

   D) Without any negative consequences for individuals.

5. Who argued that 'In philosophical terms, theoria has come to mean the contemplation of the cosmos'?

   A) Jurgen Habermas

   B) Paramjit Singh Judge

   C) Anthony Giddens

   D) Pierre Bourdieu

6. For Max Weber, the motives behind any social action are rooted in which of the following?
   A) Tradition, rationality and emotions
   B) Rationality, emotions and customs
   C) Emotions, customs and religious beliefs
   D) Tradition, context in which action is happening and rationality

7. _____ is an attempt to explain large scale relationships and answer fundamental questions such as why societies form and why they change.
   A) Paradigms
   B) Grand Theory
   C) Macro Theory
   D) Micro Theory

8. Which one of following is an important approach to understand the deviant and criminal behavior?
   A) Social Learning Theory
   B) Conflict Theory
   C) Labelling Theory
   D) Structural Strain theory

9. For whom, 'social action' is intentional, symbolic and institutional?
   A) Robert Merton
   B) Max Weber
   C) Talcott Parsons
   D) Anthony Giddens

10. 'Serendipity Pattern' in a social science research as a 'discovery by chance' is proposed by who among the following?
   A) Talcott Parsons
   B) Zygunt Bauman
   C) Slavoc Zizek
   D) Robert K Merton

11. Who is the proponent of the 'Participant Observation' method to study Indian society?
   A) A.R. Desai
   B) Yogendra Singh
   C) M.N. Srinivas
   D) Andre Beteille

12. Which among the following is not a methodological problem discussed by M.N. Srinivas while discussing the role of 'fieldworker' in the 'field'?

A) Researcher being worried about being an unwelcomed guest

B) Locating empirical findings into a theoretical framework

C) Choosing a field randomly without providing rationale for it

D) Bringing the reliable data with accurate observation

13. The phenomenon of 'self-reflexivity' is given by whom?

A) Alvin Goldner

B) Harriet Martineau

C) Marianne Weber

D) Habermas

14. "The conclusions arrived at as the result of inquiry and investigation are independent of the race, color, creed, occupation, nationality, religion, moral preferences, and political predispositions of the investigator" is defined as:

A) Subjectivity

B) Ethical Neutrality

C) Objectivity

D) Recasting Theory

15. Indological approach is based on which kind of method?

A) Positivist

B) Interpretative

C) Ethnomethodological

D) Comparative

16. Who among the following advocated the first socio-anthropological study of a complex society with high cultural traditions w.r.t studying Indian society?

A) D.P. Mukherjee

B) A.R. Desai

C) M.N. Srinivas

D) Mckim Marriott

17. Who among the following written the book titled as 'Asian Drama: An Inquiry into the Poverty of Nations'?

A) Gunnar Mydral

B) S.C. Dube

C) Satish Deshpande

D) Yogendra Singh

18. Who argued that "in anthropology the 'developing societies' become 'deceived societies' as they have had their present transformed into an endless transition 'an endless pause'"?

A) Radhakamal Mukherjee

B) G.S. Ghurye

C) T.N. Madan

D) Ranajit Guha

19. Who among the following emphasized on using the term 'native categories to analyse Indian society'?

A) B.K. Nagla

B) Louis Dumont

C) D.P. Mukherjee

D) T.K. Oommen

20. Which of the following universities first introduced the formal teaching of sociology in India?

A) University of Calcutta

B) University of Bombay

C) University of Lucknow

D) Banaras Hindu University

21. The process by which tribal communities selectively adopt features of neighboring Hindu castes, leading to a blending of cultural traits is defined as:

A) Sanskritization

B) Westernization

C) Acculturation

D) Indigenization

22. According to Marx, what is the primary source of profit for capitalists in capitalist economy?

A) Innovation

B) Surplus value extracted out of workers

C) Effective management

D) Government subsidies

23. Which sampling method is most suitable for a heterogeneous population?

A) Cluster Sampling

B) Stratified Sampling

C) Convenient Sampling

D) Lottery Method

24. Which of the following is the synonymous term for 'triangulation method'?

A) Qualitative

B) Mixed

C) Inductive

D) Deductive

25. **Consider the following statements:**

Assertion (A): The New Social Movements prioritize quality of life issues.

Reason (R): Satisfaction with Parliamentary Democracy led to the rise of New Social Movements.

Choose the Correct Option:

A) Both (A) and (R) are true and (R) is the correct explanation of (A)

B) Both (A) and (R) are true, but (R) is not the correct explanation of (A)

C) (A) is true, but (R) is false

D) (A) is false, but (R) is true

26. **Consider the following statements:**

Assertion (A): Mainstream feminism has sometimes been criticized for focusing primarily on the experiences of white middle-class women.

Reason (R): Intersectionality developed to address the exclusion of diverse women's experiences.

Choose the Correct Option:

A) Both (A) and (R) are true and (R) is the correct explanation of (A)

B) Both (A) and (R) are true, but (R) is not the correct explanation of (A)

C) (A) is true, but (R) is false

D) (A) is false, but (R) is true

27. Match the following Acts with their year of establishment :

1.	Special Marriage Act	i.	1961
2.	The Dowry Prohibition Act	ii.	1856
3.	The Hindu Widows Remarriage Act	iii.	1954
4.	The Hindu Marriage Disabilities Removal Act	iv.	1946

Choose the Correct Match:

A) 1-iii, 2-i, 3-ii, 4-iv

B) 1-iv, 2-ii, 3-iii, 4-i

C) 1-iii, 2-ii, 3-iv, 4-i

D) 1-i, 2-ii, 3-iii, 4-iv

28. Who among the following describes 'Jajmani System' as inter-familial, inter-caste relationship pertaining to the patterning of super and sub-ordinate relations between patrons and suppliers of services?

A) Yogendra Singh

B) Harold Gould

C) Nandu Ram

D) Herbet Risley

29. Janani Suraksha Yojna was launched in year?

A) 2010

B) 2008

C) 2005

D) 2009

30. Match List - I and List - II

	List - I		**List - II**
1.	Max Weber	i.	Suicide
2.	Karl Marx	ii.	Looking Glass Self
3.	Cooley	iii.	Bureaucracy
4.	Durkheim	iv.	Dialectical Materialism

Choose the Correct Match:

A) 1-ii, 2-iv, 3-iii, 4-i

B) 1-iii, 2-iv, 3-ii, 4-i

C) 1-i, 2-ii, 3-iii, 4-iv

D) 1-ii, 2-iii, 3-iv, 4-i

31. Who defined culture as 'that complex whole which includes knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man as a member of society'?

A) MacIver and Page

B) D.N. Mazumdar

C) Bogardus

D) Edward Tylor

32. **Consider the following statements:**

Assertion (A) : Surveys are responsible for the efficient collection of data on large number of individuals.

Reason (R) : Hence, surveys allow for precise comparisons to made between the answers of respondents.

Choose the Correct Option:

A) Both (A) and (R) are true and (R) is the correct explanation of (A)

B) Both (A) and (R) are true, but (R) is not the correct explanation of (A)

C) (A) is true, but (R) is false

D) (A) is false, but (R) is true

33. Which of the following method consists of biographical material assembled about particular individuals recalled by themselves?

A) Life History method

B) Content Analysis method

C) Interview method

D) Comparative research method

34. The questions of social world that sociologists deal with are:

I. Comparative

II. Factual

III. Theoretical

IV. Developmental

Choose the Correct Option:

A) I, II, III

B) I, II, IV

C) I, II, III, IV

D) I and IV only

35. Who among the following do not belong to Frankfurt school of Sociology?

A) Hebert Marcuse

B) Pierre Bourdieu

C) Theodor Adorno

D) Max Horkheimer

36. Who among the following argued that "rather than living in the world 'beyond the modern' we are moving into a phase of 'the second modernity'"?

A) Anthony Giddens

B) Habermas

C) Ulrich Beck

D) Manual Castells

37. Who among the following argues that 'in network economy we will establish our personal identities through constant interaction with others'?

A) Ernest Burgess

B) Robert E Park

C) Manual Castells

D) Max Weber

38. Who among the following wrote the book titled as 'Streetwise: Race, Class and Change in an Urban Community'?

A) Elijah Anderson

B) Nels Anderson

C) Ulrich Beck

D) Erving Goffman

39. The classical study of 'Folkways' was authored by:

A) Sumner

B) Marriott

C) Ogburn

D) Redfield

40. 'Khasis' are the matrilineal tribe of India.

I. They are inhabitants of Meghalaya

II. They practice polygamy

III. They also constitute a patriarchal society

IV. The youngest daughter inherits the ancestral property

V. The mother's brother plays a significant role

Choose the Correct Option:

A) I, III and V

B) I, II and III

C) I, III, IV

D) II, III, IV

41. _____ are definite, certain without questions and their meanings are self-evident.

A) Hypothesis

B) Perspectives

C) Concepts

D) Facts

42. Family is an example of

A) Community

B) Society

C) Institution

D) Caste Council

43. A constable's daughter becoming an IAS Officer is an example of

A) Horizontal Mobility

B) Lateral Mobility

C) Vertical Mobility

D) Intra-generational Mobility

44. Who argues that 'the child achieves an understanding of being a separate agent by seeing how others behave towards him or her in social contexts'?

A) Erving Goffman

B) G.H. Mead

C) Jean Piaget

D) Simon Biggs

45. Which of the following kinship system is 'bilateral' tracing descent line through both male and female links?

A) Uxorilocal

B) Patrilineal

C) Cognatic

D) Agnatic

46. Who among the following have advanced the notion of 'sick role' in order to describe the patterns of behavior?

A) Robert Merton

B) Michael Foucault

C) Talcott Parsons

D) C. Wright Mills

47. The area of transition between well recognized urban land uses and the area devoted to agriculture is known as

A) Rural-Urban fringe

B) Metropolis

C) Rural Urban Continuum

D) Census Area

48. _____ refers to the knowledge and connections that enable people to cooperate with one another for mutual benefit and extend their influence.

A) Cultural Capital

B) Social Capital

C) Economic Capital

D) Political Capital

49. Who among the following is the first woman sociologist?

A) Marianne Weber

B) Harriet Martineau

C) Ann Oakley

D) Margaret Mead

50. Who among the following gave the concept of 'Gender Performativity'?

A) Simone De Beauvoir

B) Judith Butler

C) Sandra Harding

D) Maria Mies

51. What is the central argument of Gandhi's Hind Swaraj?

A) India should embrace Western technology to modernize rapidly.

B) Indian independence means adopting English-style governance.

C) Real Swaraj requires self-rule achieved through non-violence and rejection of Western civilization.

D) Independence can be attained through violent revolution.

52. Which feminist perspective primarily seeks equality for women through legal reform and equal opportunities within existing social structures?

A) Radical feminism

B) Liberal feminism

C) Socialist feminism

D) Postmodern feminism

53. Which Sustainable Development Goal (SDG) is most closely related to sanitation policies like Swachh Bharat Abhiyan and the Sulabh Movement?

A) SDG 2 - Zero Hunger

B) SDG 6 - Clean Water and Sanitation

C) SDG 5 - Gender Equality

D) SDG 9 - Industry, Innovation, and Infrastructure

54. What is the primary objective of the Swachh Bharat Mission?

A) Promoting tourism

B) Making India open-defecation free (ODF)

C) Building roads

D) Providing healthcare to rural areas

55. Which of the following is not typically a focus in environmental sociology?

A) Population and demography

B) Science and technology

C) Quantum mechanics

D) Consumption and sustainability

56. The term "subaltern," widely discussed by Spivak, originally comes from the writings of:

A) Antonio Gramsci

B) Edward Said

C) Michel Foucault

D) Jacques Derrida

57. The term 'Strategic Essentialism' is associated with which of the following authors?

A) Ranajit Guha

B) Dipesh Chakravorty

C) Gayatri Spivak

D) Antonio Gramsci

58. The Vishakha judgement dealt with:

A) Dowry

B) Corruption

C) Workplace Harassment

D) Maternity Rights

59. Which of the following terms is a constitutional category?

A) Adivasi

B) Dalit

C) Scheduled Tribe

D) Bahujan

60. Which of the following is termed as 'belief in spirits?

A) Animism

B) Naturism

C) Wahabism

D) Totemism

61. To whom, 'religion is important because of the role it plays in social change, particularly the development of western capitalism'?

A) Jonanthan Smith

B) Max Weber

C) Emile Durkheim

D) Peter Berger

62. Which of the following is/are true about the concept of 'Secularization'?

I. Declining influence of religion

II. Change is experienced at the level of social status and religiosity

III. Measurement of secularization is difficult

IV. Religious ideals will completely disappear from society

Choose the correct answer from the options given:

A) I, II and III are true

B) II, III and IV are true

C) Only I and II are true

D) Only II and III are true

63. Match the List - I with the List - II:

List - I (Type of Scale)	**List - II (Type of Variable)**
1. Nominal	i. Ranks of states according to sex ratio
2. Ordinal	ii. Political Party
3. Interval	iii. Age
4. Ratio	iv. Scores in IQ test

Choose the Correct Match:

A) 1-i, 2-ii, 3-iii, 4-iv

B) 1-ii, 2-i, 3-iv, 4-iii

C) 1-iv, 2-iii, 3-i, 4-ii

D) 1-ii, 2-i, 3-iii, 4-iv

64. Who among the following sociologists considers conflicts as having functional importance in society?

A) Lewis Coser

B) Randall Collins

C) Rudolph Dahrendorf

D) Jurgen Habermas

65. Who among the following claims that the 'public sphere' developed first in the salons and coffee houses of London, Paris and other European cities?

A) Pierre Bourdieu

B) Jurgen Habermas

C) Max Horkheimer

D) Herbert Marcuse

66. Who argues that 'the world of hyperreality is constructed of simulacra'?

A) Jean Baudrillard

B) Thompson

C) J. Habermas

D) William F Whyte

67. The functionalist approach to social change emphasizes:

A) The inevitability of conflict

B) The interdependence of institutions for societal stability

C) Only economic factors

D) Randomness in change

68. What is a cult?

A) A religious organization that claims a unique new revelation

B) A belief that the sacred and resides in spirits found in people and other natural phenomena

C) Religions that do not worship a god as such but rather promote a moral code or belief.

D) A religious organization that is based on secular beliefs.

69. Social Exchange theory was introduced by

A) G . Homans

B) G . H Mead

C) Goffman

D) Peter Blau

70. What are the main features of western culture

A) Belief in universal rationality

B) Progress through empirical science

C) Goals involving mastery of nature

D) All of the above

71. Symbolic behavior of a person means

A) Meaningful behavior

B) Covert behavior

C) Overt behavior

D) Significant behavior

72. Religion 'is itself the historical product of discursive process, that is within the cultural location of modernity', whose statement is this.

A) Pierre Bourdieu

B) Talal Asad

C) Michael Foucault

D) Clifford Geertz

73. The term 'ethnocentrism' was coined by

A) William f Ogburn

B) Max Weber

C) W.G. Sumner

D) Radcliffe Brown

74. Who among the following distinguished between the 'significant others' and 'generalized others?

A) G . H. Mead

B) Harold Garfinkel

C) Erving Goffman

D) W.I. Thomas

75. Who among the following traced the origin of citizenship in key stages of civil rights, political rights and social rights?

A) Benedict Anderson

B) T.H. Marshall

C) T.K. Oommen

D) D.N. Dhanagre

76. It is believed that 'conformity' with the custom is:

A) an automated process

B) indifferently imposed process

C) an artificial process

D) conceivable amount of deviation

77. A biological being is transformed into the sociological; being through which of the following processes:

A) Socialization

B) Westernization

C) Politicization

D) Secularization

78. Kula exchange is associated with

A) Azande tribes

B) Australian Aboriginal

C) Trobriand Islanders

D) Krowe tribes

79. Who among the following was the first one to distinguish between the state and the government?

A) Locke

B) Hume

C) R. Dahl

D) Marx

80. Who among the following advocated the functional theory of stratification?

A) Davis and Moore

B) Goode and Hatt

C) Davis and Parsons

D) Betellie and Marriott

81. Who among the following proposed the concept of 'concomitant variable' and its significance in social science research?

A) Emile Durkheim

B) Max Weber

C) Radcliffe Brown

D) Andre Betellie

82. What is the literary meaning of the word 'ethnography' ?

A) Knowledge of Community

B) Writing Culture

C) Cultural System

D) Content analysis

83. Who among the following introduced the concept of 'total institution'?

A) Michael Foucault

B) Theodor Adorno

C) Robert Merton

D) Erving Goffman

84. The concept of 'Iron law of Oligarchy' was introduced by?

A) Vilfredo Pareto

B) Robert Michels

C) G. Mosca

D) Max Weber

85. The book 'Invitation to Sociology' is written by?

A) H.E. Barns

B) P.L. Berger

C) Bogardus

D) Nisbet

86. Hermeneutics mean

A) Explaining

B) Ordering

C) Classification

D) Organization

87. The concept of 'counter-culture' was given by?

A) Robert Redfield

B) Milton Singer

C) Thomas Kuhn

D) C.H. Cooley

88. Which of the following type of research involves collecting data from a sample at a single point of time?

A) Longitudinal

B) Cross-Sectional

C) Case Study

D) Exploratory

89. Who among the following published 'Ancient Society: Researchers in the Lines of Human progress from Savagery through Barbarism, to Civilization'?

A) L H Morgan

B) Herbert Spencer

C) James Frazer qualitative data anal

D) Stanley Tambiah

90. Which one of the following is not a software used for analysis of qualitative data?

A) MAXQDA

B) N-VIVO

C) ATLAS

D) SPSS

91. The terms 'opus operatum' and 'modus operandi' are associated with whom?

A) Pierre Bourdieu

B) Thomas Kuhn

C) Jurgen Habermas

D) T. Adorno

92. Who among the following argues that the relations among units within the structure occur in 'binary pair?

A) Saussure

B) Levi Strauss

C) Radcliffe Brown

D) B.S. Cohn

93. Who among the following studied the relationship of 'religion' and 'society' while focusing on the significance of notion of *pole* (purity) and *madi* (pollution) among Coorgs of South India?

A) Mckim Marriott

B) M.N. Srinivas

C) Yogendra Singh

D) T.N. Madan

94. Who among the following is associated with development of 'Kinship Map of India'?

A) Irawati Karve

B) Devaki Jain

C) Sherry Otner

D) Patricia Uberoi

95. Who among the following coined the term 'eco-feminism'?

A) Francoise d'Eaubonne

B) Simone De Beauvoir

C) Jeanne Baret

D) Morique Vittig

96. Which of the following is not a type of qualitative method?

A) Focused Interview

B) Visual Ethnography

C) Interviews

D) Sample Survey

97. Who among the following wrote the book titled 'An Anthropologists among Historians and Other Essays'?

A) B.S. Cohn

B) T.K. Oommen

C) B.K. Nagla

D) Yogendra Singh

98. Who among the following argued that 'the scientific progress is not a linear accumulation of knowledge but rather a series of revolutionary changes where one paradigm is replaced by other?

A) Thomas Kuhn

B) Ibn Khaldun

C) Peter Winch

D) Max Planck

99. What is the role of civil society organization in holding government accountable?

A) To enforce laws

B) To provide security

C) To conduct elections

D) To monitor government actions and advocate for transparency

100. What is the term for a society characterized by a diversity of cultures, ethnicities, and religions?

A) Homogenous

B) Pluralistic

C) Totalitarian

D) Authoritarian

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Booklet Serial No. 338189

Test Booklet Series

TEST BOOKLET
LECTURER - (10+2)
MATHEMATICS
Written Test - 2025
(65)

A

Time Allowed : Two Hours *Maximum Marks : 100*

INSTRUCTIONS

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2. **Please note that it is the candidate's responsibility to encode and fill in the Roll Number and Test Booklet Series Code A, B, C or D carefully and without any omission or discrepancy at the appropriate places in the OMR Answer /Response Sheet. Any omission/discrepancy will render the Response Sheet liable for rejection.**
3. You have to enter your Roll Number on the Test Booklet in the Box provided alongside. ***DO NOT*** **write** ***anything else*** on the Test Booklet.
4. This Test booklet contains **100** items (questions). Each item comprises of four responses (answers). You will select the response which you want to mark on the Answer Sheet/Response Sheet. In case you feel that there is more than one correct response, mark the response which you consider the best. In any case, choose ***ONLY ONE*** response for each item.
5. You have to mark all your responses ***ONLY*** on the separate Answer /Response Sheet provided. *See directions in the Response Sheet.*
6. ***All*** items carry equal marks.
7. Before you proceed to mark in the Answer /Response Sheet, the response to various items in the Test Booklet, you have to fill in some particulars in the Answer /Response Sheet as per instructions sent to you with your Admission Certificate.
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11. **Penalty for wrong answers:**

    THERE WILL BE PENALTY FOR WRONG ANSWERS MARKED BY THE CANDIDATE IN THE WRITTEN TEST (OBJECTIVE TYPE QUESTIONS PAPERS).

    (i) There are four alternatives for the answer to every question. For each question for which a wrong answer has been given by the candidate, **(0.25)** of the marks assigned to that question will be deducted as penalty.

    (ii) If a candidate gives more than one answer, it will be treated as a **wrong answer** even if one of the given answers happens to be correct and there will be same penalty as above for that question.

    (iii) If a question is left blank, i.e., no answer is given by the candidate, there will be **no penalty** for that question.

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1. Let A be a closed subset of R such that $A \neq \varphi$ and $A \neq R$. Thus A is :

   A) the closure of the interior of A.

   B) a countable set.

   C) a compact set.

   D) Not an open set.

2. Let Z denotes the set of integers and $Z_{\geq 0}$ denote the set $\{0,1,2,3,.....\}$. Consider the map $f : Z_{\geq 0} \times Z \to Z$ given by $f(m,n) = 2^m(2n+1)$. Then the map f is

   A) onto but not one - one.

   B) one - one but not onto.

   C) both one - one and onto.

   D) neither one - one nor onto.

3. If a and b are any two real numbers such that $a \leq b + 1/n$ for all $n \in N$ then the best possible relation is:

   A) $a \leq b$

   B) $a \geq b$

   C) $a < b$

   D) $a = b$

4. The set Z of integers has :

   A) infimum.

   B) supremum.

   C) neither supremum nor infimum.

   D) sometimes supremum and sometime infimum.

5. If a is a number greater than 1. Then the value of $\lim_{n \to \infty} \sqrt[n]{a}$ will be:

   A) greater than 1.

   B) less than 1.

   C) equal to zero.

   D) equal to 1.

6. The value of $\lim_{n\to\infty}\left\{\frac{(3n)!}{(n!)^3}\right\}^{1/n}$ will be:

A) 81

B) 27

C) 21

D) 12

7. The series $\sum_{n=1}^{\infty}\frac{1}{n^p}$ for all $p>0$ is :

A) convergent if $p=1$

B) convergent if $p<1$

C) convergent if $p>1$

D) convergent if $p\leq 1$

8. If $\{x_n\}$ is a convergent sequence in R and $\{y_n\}$ is a bounded sequence in R then it can be concluded that :

A) $\{x_n+y_n\}$ is convergent.

B) $\{x_n+y_n\}$ is bounded.

C) $\{x_n+y_n\}$ has no convergent subsequence.

D) $\{x_n+y_n\}$ has no bounded subsequence.

9. Suppose that $\{x_n\}$ is a sequence of real numbers satisfying for every $\varepsilon>0$, there exists n_0 such that $|x_{n+1}-x_n|<\varepsilon$ for all $n\geq n_0$ then the sequence $\{x_n\}$ is :

A) bounded but not necessarily Cauchy.

B) Cauchy but not necessarily bounded.

C) convergent.

D) not necessarily bounded.

10. If the set of the points of a bounded function f on the interval $[a, b]$ with a set of points of discontinuity has:

A) no integrability.

B) infinite number of limit points.

C) a finite number of limit points.

D) no limit points.

11. The value of $\int_0^{\pi/2} \log \sin x \, dx$ is:

A) $\pi / 2 \log 2 - 1$

B) $-\pi / 2 \log 2$

C) $1 - \pi / 2 \log 2$

D) $2\pi \log 2 - 1$

12. If a sequence $\{f_n\}$ converges uniformly in $[a,b]$ and x_0 is a point of $[a,b]$ such that $\lim_{x \to x_0} f_n(x) = a_n$ for all n = 1,2,3, ... then $\{a_n\}$:

A) is convergent

B) is divergent

C) is neither convergent nor divergent

D) does not exist

13. In a complex function, the point at which the function is not differentiable is called :

A) Analytic

B) Linear

C) Singular

D) Non-singular

14. Which of the following function is analytic?

A) x^2+iy^2

B) $2xy+i(x^2+y^2)$

C) $(x-iy)/(x^2+y^2)$

D) $(x-iy)/(x-iy+a)$

15. The value of m so that $2x-x^2+my^2$ may be harmonic will be :

A) 0

B) 1

C) 2

D) 3

16. The image of the circle $|z-1|=1$ in a complex plane under the mapping $w=1/z$ will be [if $u=x/(x^2+y^2)$] :

A) 2u–1=0

B) u^2–1=0

C) u–2=0

D) u–1=0

17. The inverse transformation $w=1/z$ transforms the straight line $ay+bx=0$ into:

A) circle.

B) straight line through the origin.

C) straight line through all points.

D) circle through origin.

18. The value of the integral $\int_C 4x^3dx+3y^2z^2dy+2y^3zdz$ where C is any path joining A(–1,1,0) to B(1,2,1) will be :

A) 1

B) 0

C) 4

D) 8

19. The value of the integral $\int_C (1/z)\cos z \, dz$ where C is the ellipse $9x^2 + 4y^2 = 1$ will be:

A) 0

B) $2\pi i$

C) 1

D) πi

20. The complex function $f(z) = e^{-\frac{1}{(z-1)^2}}$ at a point $z = 1$ has :

A) a pole of order 1.

B) a pole of order 2.

C) an isolated essential singularity.

D) a non - isolated essential singularity.

21. The residue of $\frac{z^3}{(z-2)(z-3)}$ at its poles will be :

A) 81

B) 27

C) 19

D) 35

22. Which of the following statement is not correct?

A) Two curves are orthogonal if they intersect at right angle at each of their points of intersection.

B) Every harmonic function does not satisfy Laplace's equation.

C) Conjugate of a conjugate function is also analytic.

D) If $f(z)$ is analytic then mapping is conformal.

23. A function that is analytic everywhere in the finite plane except at a finite number of poles is called:

A) Homomorphic function.

B) Entire function.

C) Integral function.

D) Meromorphic function.

24. Let V be a vector space, T is a linear transform on V into V such that $T_\alpha = 0$ for all $\alpha \in V$ then :

A) T is identity transform.

B) T is zero transform.

C) T is invertible

D) T is orthogonal.

25. Let V be a vector space and T is a linear operator on V. If W is a subspace of V then W is invariant under T if :

A) $T(W) \subset W$

B) $W \subset T(W)$

C) $T(W) = W$

D) the entire above are correct.

26. If W_1 and W_2 are subspaces of V, then the following statement is false :

A) $W_1 \cup W_2$ is a subspace of V.

B) $W_1 \cap W_2$ is a subspace of V.

C) $W_1 + W_2$ is a subspace of V.

D) $W_1 - W_2$ is a subspace of V.

27. If W is the proper subspace of a vector space V then :

A) $\dim V < \dim W$

B) $\dim W < \dim V$

C) $\dim W = \dim V$

D) $\dim W \geq \dim V$

28. If f_1 and f_2 are two linear functionals on vector space V. If we define as $f_1(a,b) = a + 2b$ and $f_2(a,b) = 3a - b$. Then the value of $(3f_1 - 4f_2)$ (a,b) will be :

A) $9a + 10b$

B) $10b - 9a$

C) $2a - b$

D) $2a + 6b$

29. A real quadratic form $X^T AX$ is positive definite iff :

A) All eigen values of A are greater than zero.

B) All eigen values of A are less than zero.

C) All eigen values of A are zero.

D) All eigen values are less than or equal to zero.

30. The matrix $\begin{pmatrix} 0 & i \\ -i & 0 \end{pmatrix}$ is a :

A) Hermitian matrix.

B) Skew - Hermitian matrix.

C) Symmetric matrix.

D) Skew - Symmetric matrix.

31. In a matrix, let m = rank of matrix A and n = number of linearly independent columns vector of matrix A, then :

A) $m < n$

B) $m > n$

C) $m = n$

D) $m \leq n$

32. If $\lambda_1, \lambda_2, \lambda_3, ...\lambda_n$ are the characteristic roots of a matrix A, then the matrix A^{-1} will have the roots :

A) $1/\lambda_1, 1/\lambda_2, 1/\lambda_3, ..., 1/\lambda_n$

B) $\lambda_1, \lambda_2, \lambda_3, ..., \lambda_n$

C) zero

D) Infinity

33. The rank of the matrix $A = \begin{bmatrix} 0 & 2 & -3 \\ 2 & 0 & 5 \\ -3 & 5 & 0 \end{bmatrix}$ will be :

A) 4

B) 3

C) 2

D) 1

34. If A is an m×n matrix and B is p×q matrix then matrix $(A+B)$ exists only when :

A) $m = p$ and $n = q$

B) $m = q$ and $n = p$

C) $m = n$ and $p = q$

D) $m \neq p$ and $n = q$

35. If a and b are integers with $b \neq 0$ then there exists unique integers q and r such that $0 \leq r < |b|$ then :

A) $a = br + q$

B) $a = qb + r$

C) $b = aq + r$

D) $b = ar - q$

36. If a | bc, with $gcd\,(a,b)$=1, Then :

A) $b \mid a$

B) $b \mid c$

C) $a \mid c$

D) $c \mid b$

37. All prime numbers that divide 50! are :

A) All primes ≥ 23

B) All primes ≥ 31

C) All primes ≤ 43

D) All primes ≤ 47

38. The congruence of $2222^{5555}+5555^{2222}$ is :

A) 1 (*mod* 7)

B) 0 (*mod* 5)

C) 0 (*mod* 7)

D) 2 (*mod* 5)

39. The highest power of 5 dividing 1000! will be :

A) 349

B) 249

C) 259

D) 369

40. If $n \geq 1$ and $gcd\,(a,n) = 1$, then the value of $a^{\varphi(n)}$ will be :

A) $0\ (mod\ n)$

B) $0\ (mod\ n^2)$

C) $1\ (mod\ n)$

D) $1\ (mod\ 2n)$

41. If G is a finite group and order of this group is m then for all $a \in G$ then:

A) $a^m = e$ is an identity.

B) $a^m \neq e$

C) $a^m = am$

D) $a^m = a^{-1}$

42. If H_1 and H_2 are two right cosets of a subgroup H then :

A) $H_1 \cap H_2 = \varphi$ or $H_1 = H_2$

B) $H_1 \cap H_2 \neq \varphi$

C) $H_1 \cup H_2 = \varphi$

D) $H_1 \neq H_2$ and $H_1 \cap H_2 \neq \varphi$

43. The permutation $\begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 \\ 6 & 1 & 2 & 5 & 4 & 6 \end{pmatrix}$ is equivalent to :

A) (1 6 3 2) (2 1)

B) (1 6 3 2) (1 1)

C) (1 6 3 2) (4 5)

D) (1 6 3 2) (5 4)

44. If G is a group such that $a^2 = e$ for all $a \in G$, then G is :

A) Abelian group

B) Non - abelian group

C) a ring

D) field

45. If $a \in G$ is a generator of a cyclic group and order of a is $n < \infty$ then the order of cyclic group m is :

A) infinity

B) $m = n$

C) $m > n$

D) $m < n$

46. A ring R is an integral domain if and only if :

A) R is a commutative ring.

B) R is commutative with zero divisors.

C) R is commutative with non - zero divisor.

D) R is a ring with zero divisors.

47. The non - zero elements a,b of a ring $(R,+,\cdot)$ are said to be zero divisors if :

A) $a \cdot b = 0$

B) $a \cdot b = 1$

C) $a \cdot b \neq 0$

D) $a \cdot b \neq 1$

48. Which of the following statement is **false**?

A) The intersection of two non-empty sub rings is a sub ring.

B) The intersection of two non-empty subgroups is a subgroup.

C) A skew field has zero divisors.

D) An integral domain has zero divisors.

49. An ideal $M \neq R$ in a ring R is maximal ideal of R if U is the ideal of R and $M \subset U \subset R$ then :

A) Either $M = U$ or $R = U$

B) $M = R = U$

C) $M = R \neq U$

D) $M \neq U \neq R$

50. If R is an integral domain with unit element then :

A) $R[x]$ is not a commutative ring.

B) $R[x]$ has a unit element.

C) Any unit in $R[x]$ is unit in R.

D) Any unit in $R[x]$ is not a unit in R.

51. If $f(x) \in F(x)$ then there is a finite extension E of F such that :

A) $[E:F] \leq deg\ f(x)$

B) $[E:F] \geq deg\ f(x)$

C) $[F:E] \geq deg\ f(x)$

D) $[F:E] \leq deg\ f(x)$

52. A non - empty set P, together with a binary relation R, is said to form a partially ordered set if it holds:

A) Reflexivity, Symmetry and Transitivity.

B) Reflexivity, Anti-symmetry and Comparability.

C) Reflexivity, Anti-symmetry and Transitivity.

D) Anti-reflexivity, Symmetry and Transitivity.

53. Let (P,R) and (Q,T) are two posets with one - one onto mapping $f: P \to Q$ if ${}_xR_y \leftrightarrow f(x)T\,f(y)$ for all $x, y \in P$ is called :

A) Homomorphism

B) Automorphism

C) Meromorphism

D) Isomorphism

54. The poset $\{2, 3, 4, 6\}$ under divisibility is not a lattice as :

A) $1 \vee 2$ does not exist.

B) $4 \vee 6$ does not exist.

C) $2 \vee 4$ does not exist.

D) $3 \vee 4$ does not exist.

55. Which of the following is a wrong statement?

A) Dual of a lattice is a lattice.

B) Product of two lattices is a lattice.

C) A finite lattice has only greatest elements.

D) Dual of a complete lattice is complete.

56. A non - empty subset I of a lattice L is called an ideal of L if :

A) $a, b \in I \rightarrow a \wedge b \in I$

B) $a, b \in I \rightarrow a \vee b \in I$

C) $a \in L, l \in I \rightarrow a \vee l \in L$

D) $a \in I, I \in L \rightarrow a \wedge L \in I$

57. In an ideal A of a lattice L, if A is properly contained in L whenever $a \wedge b \in A$ for all $a \in A$ or $b \in A$ is called :

A) Prime ideal of L.

B) Dual ideal of L.

C) Complex ideal of L.

D) Complete ideal of L.

58. Choose the correct statement from the following :

A) Distributive lattice is not a lattice.

B) Dual of a distributive lattice is not distributive.

C) A lattice L is modular if and only if it does not contain a pentagonal sub-lattice.

D) Homomorphic image of a modular lattice is not modular.

59. If L is the set of factors of 30, then L forms a Boolean Lattice under divisibility and this would be isomorphic to $(P(S), \subseteq)$ if :

A) $S = \{1,2,3\}$

B) $S = \{0,1,2\}$

C) $S = \{3,2,0\}$

D) $S = \{1,3,0\}$

60. Let L be a relatively complemented lattice with least element 0 then any ideal of L can equal to the kernel corresponding to at most :

A) Equivalence relation.

B) Congruence relation.

C) Transitive relation.

D) Reflexive relation.

61. The differential equation whose solution is $y^2 = 4ax$, where a be a constant, will be:

A) $2y + 4xy = 0$

B) $2xy - y' = 0$

C) $2xy' - y = 0$

D) $2x + y' = 0$

62. The general solution of $ydx - xdy = 0$ will be:

A) $x = cy$

B) $x + y = c$

C) $xy = c$

D) $x - y = c$

63. The integrating factor for the differential equation $2y\,dx + x\,dy = 0$ will be :

A) x

B) y

C) xy

D) y^2

64. The unique solution of the equation $xy''-1-0$ with parameters $y(1)=0$ and $y'(1)=2$ will be :

A) $y = x\log x - 1$

B) $y = \log x - x - 1$

C) $y = x\log x + 1$

D) $y = x + x\log x - 1$

65. The order and degree of a differential equation $\left[1+(y')^2\right]^{3/2} - ky'' = 0$ will be :

A) First order and second degree.

B) Second order and first degree.

C) Second order and second degree.

D) Third order and second degree.

66. For $\frac{d^2y}{dx^2} + 4y = \tan 2x$ solving by variation of parameters. The value Wronskian W will be :

A) 1

B) 2

C) 3

D) 4

67. The relation $z = (x+a)(y+b)$ represents the partial differential equation:

A) $z = p/q$

B) $z = p - q$

C) $z = p+q$

D) $z = pq$

68. The general solution of partial differential equation $\frac{\partial^2 z}{\partial x^2} + \frac{\partial^2 z}{\partial y^2} = \frac{z}{a}$ will be :

A) $z = e^{\frac{y}{a}} f(x-y)$

B) $z = e^{\frac{y}{a}} f(x)$

C) $z = e^{y} f(x)$

D) $z = e^{a} f(x+y)$

(65) (A)

69. The complete solution of $z = px + qy + p^2 + q^2$ will be :

A) $z = ax + by$

B) $z = ax + by + a^2 + b^2$

C) $z = a^2x^2 + b^2$

D) $z = ax + 2ay + c$

70. The general integral of $\frac{\partial z}{\partial y} = 3\left(\frac{\partial z}{\partial x}\right)^2$ will be :

A) $z = ax + 3ay + c$

B) $z = ax + 3a^2y + c$

C) $z = ax^2 + 3ay + c$

D) $z = ax + 3y + c$

71. The solution of the partial differential equation $\frac{\partial^2 z}{\partial x^2} - a^2\frac{\partial^2 z}{\partial y^2} = 0$ will be :

A) $z = f_1(y + ax) + f_2(y - ax)$

B) $z = 2f_1(y + ax)$

C) $z = f_1(ax + y) + f_2(y)$

D) $z = f_1(ax + y) + f_2(x)$

72. Which of the following statement is **wrong**?

A) Every closed ball in a metric space is a closed set and the converse is also true.

B) Every set in a discrete metric space is open.

C) The intersection of an infinite number of open sets may not be open.

D) Any family of disjoint non-empty open sets of real numbers is countable.

73. "***Every complete metric space is of second category***" is the statement of :

A) Cantor's Intersection Theorem

B) Baire's Category Theorem

C) Cantor's Nested Sets Category Problem

D) Pascal's Category Theorem

74. The range $\{x_n : n \in N\}$ of a convergent sequence $\{x_n\}$ in a metric space (X,d) is :

A) Closed

B) Open

C) Bounded

D) Unbounded

75. If $f(x) = x^3$ for $0 \leq x \leq 1/4$ with the absolute metric d on the interval $[0, 1/4]$ then the f may be:

A) Uniformly continuous and open mapping

B) Contraction mapping

C) Discontinuous and closed mapping

D) Discontinuous and convergent mapping

76. Let (X,d) be a complete metric space and $f : (X,d) \to (X,d)$ be a contraction mapping, then f has :

A) many fixed points.

B) finite fixed points.

C) no fixed point.

D) exactly one fixed point.

77. The statement " ***An arbitrary product of compact spaces is compact in the product topology***" is the statement of:

A) Cantor's theorem

B) Tychnoff's theorem

C) Torsion's group theorem

D) Tucky's lemma

78. Let A be an open covering of the metric space (X,d). If X is compact, there is a $\delta > 0$ such that for each subset of X having diameter less than δ, then there exists an element A containing it. Then to cover A the number of δ is called :

A) Reimann number

B) Thoma number

C) Lebesgue number

D) Uniform point

79. The image of a compact space under a continuous mapping is:

A) compact

B) non compact

C) connected

D) continuous and unbounded

80. If f is continuous real - valued function on compact space then f is:

A) unbounded

B) bounded

C) constant

D) zero

81. Let X and Y are normed spaces and T is a linear operator on X into Y. Then, the following statement is **not valid**:

A) T is continuous

B) T is bounded

C) T is unbounded

D) T is continuous at the origin

82. If x is an element of a Banach algebra X, then the series $\sum_1^n x^n$ is convergent when :

A) $\|x\| = 1$

B) $\|x\| \geq 1$

C) $\|x\| > 1$

D) $\|x\| < 1$

83. A Banach space becomes Hilbert space if its norm satisfies:

A) parallel law

B) law of perpendicular

C) law of parallelogram

D) law of identity

84. The Hahn- Banach theorem is valid for linear and normed spaces defined over a :

A) linear field

B) complex field

C) linear Thoma operator

D) linear subfield

85. A subset of a vector space X such that there exists a linear function $f \neq 0$ defined on X such that $A = \{x \in x \mid f(x) = 0\}$ is called :

A) linear subset

B) equator

C) hyperplane

D) flux

86. Every reflexive Banach space is:

A) weakly complete

B) strongly complex

C) weakly compact

D) strongly conducted

87. The equation of the plane having three points, contact at the origin with the curve $x = t^4 - 1, y = t^3 - 1$ and $z = t^2 - 1$ will be :

A) $3x - 5y + 6z = 0$

B) $x - 2y + 3z = 0$

C) $3x - 8y - 6z = 0$

D) $x + y + z = 0$

88. The locus of the centre of curvature of a curve is an involute only when the curve is :

A) cylinder

B) plane

C) cone

D) sphere

89. The spherical indicatrix of a curve is a circle if and only if the curve is:

A) helix

B) sphere

C) linear

D) cone

90. A curve that intersects every member of a family of curve at right angle is termed as:

A) helicoid

B) orthonormal trajectory

C) spiraled trajectory

D) orthogonal trajectory

91. The surfaces for which Gaussian curvature is zero are called:

A) integral surface

B) minimal surface

C) developable surface

D) umblics

92. For a right helicoid, the following statement is **wrong**:

A) It is generated by a straight line.

B) It is orthogonal to the generator.

C) Parametric curves are orthogonal.

D) Meeting axes are not right angled.

93. In a sample survey, the chances of young professionals courses B.Tech. and M.C.A. degree or both are 0.86, 0.35 and 0.29 respectively. The probability of owing either or both degrees will be:

A) 0.82

B) 0.92

C) 0.08

D) 0.18

94. For any event A, event A and φ are :

A) Independent events

B) Dependent events

C) Both above options (A) and (B) are false

D) (A) is true and (B) is false

95. If the probability of getting 10 - 20, 21 - 30, 31 - 40, over 40 cars for a service at a day is 0.20, 0.35, 0.25 and 0.12 respectively. The probability of getting at least 21 cars at that particular day will be:

A) 0.72

B) 0.62

C) 0.12

D) 0.35

96. The second moment about the mean is :

A) Median

B) Variance

C) Mean deviation

D) Standard deviation

97. The moment of inertia of a rod may be equivalent in statistics as:

A) First moment about the origin

B) Second moment about the origin

C) Third moment about the origin

D) Centroid of the origin

98. We can get standard normal distribution from normal distribution if :

A) $\mu = 0, \sigma = 1$

B) $\mu = 1, \sigma = 0$

C) $\mu = \sigma = 1$

D) $\mu = \sigma = 0$

99. For Binomial Distribution, $n = 10$ and $p = 0.6$ then $E\left(X^2\right)$ will be :

A) 30.6

B) 34.7

C) 8.5

D) 38.4

100. 6 coins are tossed 6,400 times. The probability of getting 6 holds, x times will be :

A) e^{-100x}

B) $\frac{e^{-100x}}{x}$

C) $\frac{e^{-100x}}{x!}$

D) $\frac{2e^{-100x}}{x}$
