खंड – अ
(सामान्य अध्ययन)

1. मध्यप्रदेश की सबसे ऊँची चोटी स्थित है
   (A) महादेव पहाड़ियाँ
   (B) कैमूर श्रेणी
   (C) विन्ध्याचल श्रेणी
   (D) भाण्डेर श्रेणी

2. सूची – I को सूची – II से सुमेलित कीजिये और नीचे दिये गये कूट से सही उत्तर का चयन कीजिये ।

सूची – I (नदी)	सूची – II (नदी जल निकासी क्षेत्र नगर/जिला)
a. वैनगंगा	1. मुल्ताई
b. ताप्ती	2. सिवनी
c. नर्मदा	3. जबलपुर
d. बेतवा	4. विदिशा

कूट :

	a	b	c	d
(A)	2	1	3	4
(B)	1	2	3	4
(C)	2	1	4	3
(D)	1	2	4	3

3. मध्यप्रदेश में औसत तापमान को प्रभावित करने वाला सबसे प्रमुख भौगोलिक कारक है
   (A) बंगाल की खाड़ी से निकटता
   (B) कर्क रेखा का मध्यप्रदेश के बीच से गुजरना
   (C) मध्यप्रदेश के लगभग 25 प्रतिशत भाग पर वनों का आवरण है
   (D) मध्यप्रदेश के दक्षिणी भाग की भूमध्यरेखा से समीपता

4. मिट्टियों के संबंध में निम्नलिखित कथनों पर विचार कीजिए ।
   1. काली मिट्टी में लोहे और चूने की बहुत बड़ी मात्रा पायी जाती है ।
   2. बघेलखण्ड में लाल एवं पीली मिट्टी पायी जाती है।
   3. भिण्ड एवं मुरैना जिले में जलोढ़ मिट्टी पायी जाती है ।

   उपरोक्त में से सही कथन का चयन कीजिये ।
   (A) 1, 2 एवं 3
   (B) 1 एवं 2
   (C) केवल 1
   (D) केवल 2

5. निम्नलिखित में से कौन-सा जोड़ा/युग्म सही सुमेलित नहीं है ?

	जिला	खनन क्षेत्र
(A)	पन्ना	हीरा
(B)	बालाघाट	ताँबा
(C)	कटनी	चूना पत्थर
(D)	सागर	मैंगनीज

6. यूनेस्को द्वारा मध्यप्रदेश के किस टाइगर रिजर्व को जैव रिजर्व (बायोस्फीयर रिजर्व) घोषित किया गया है ?
   (A) कान्हा टाइगर रिजर्व
   (B) पेंच टाइगर रिजर्व
   (C) सतपुड़ा टाइगर रिजर्व
   (D) पन्ना टाइगर रिजर्व

SECTION – A
(General Studies)

1. The highest peak of Madhya Pradesh is located
   (A) Mahadeo hills
   (B) Kaimur range
   (C) Vindhyachal range
   (D) Bhander range

2. Match List – I with List – II and select the correct answer from the codes given below.

List – I (River)	List – II (River drainage area Town/District)
a. Wainganga	1. Multai
b. Tapti	2. Seoni
c. Narmada	3. Jabalpur
d. Betwa	4. Vidisha

Codes :

	a	b	c	d
(A)	2	1	3	4
(B)	1	2	3	4
(C)	2	1	4	3
(D)	1	2	4	3

3. The most important Geographical factor affecting average temperature in Madhya Pradesh
   (A) Proximity to the Bay of Bengal
   (B) Tropic of Cancer passes through the middle of Madhya Pradesh
   (C) About 25 percent part of the land area of Madhya Pradesh is covered by forests
   (D) Proximity to the Equator of the Southern part of Madhya Pradesh

4. Consider the following statement with reference to soils.
   1. Large amount of iron and lime are found in black soil.
   2. Red and yellow soil is found in Baghelkhand.
   3. Alluvial soil is found in Bhind and Morena District.

   Select the correct statement from the above.
   (A) 1, 2 and 3
   (B) 1 and 2
   (C) only 1
   (D) only 2

5. Which of the following pair is **not** correctly matched ?

District	Mining area
(A) Panna	Diamond
(B) Balaghat	Copper
(C) Katni	Limestone
(D) Sagar	Manganese

6. Which Tiger Reserve of Madhya Pradesh has been declared the Biosphere Reserve by UNESCO ?
   (A) Kanha Tiger Reserve
   (B) Pench Tiger Reserve
   (C) Satpuda Tiger Reserve
   (D) Panna Tiger Reserve

7. हाल ही में अन्तर्राज्यीय सीमा विवाद के लिए सुर्खियों में रहे दो राज्य हैं

(A) मिज़ोरम - मेघालय
(B) मणिपुर - मेघालय
(C) मिजोरम - अरुणाचल प्रदेश
(D) मिजोरम - असम

8. सूची – I को सूची – II से सुमेलित कीजिए तथा दिये गये कूट का प्रयोग करते हुए, सही उत्तर का चयन कीजिए ।

सूची – I (खिलाड़ी)	सूची – II (खेल)
a. चिंकी यादव	1. घुड़सवारी
b. अक्षत जोशी	2. शूटिंग
c. मुस्कान किरार	3. हॉकी
d. खम्मन सिंह	4. तीरंदाजी

कूट :

	a	b	c	d
(A)	1	2	3	4
(B)	2	1	3	4
(C)	2	1	4	3
(D)	1	2	4	3

9. ''राजमाता विजया राजे सिंधिया प्रतियोगिता'' किस खेल से संबंधित है ?

(A) क्रिकेट
(B) हॉकी
(C) फुटबाल
(D) शतरंज

10. योगेश मालवीय को किस खेल हेतु द्रोणाचार्य पुरस्कार - 2020 प्रदान किया गया ?

(A) कबड्डी
(B) कुश्ती
(C) मलखंब
(D) मुक्केबाज़ी

11. निम्न में से इनपुट डिवाइस का उदाहरण कौन-सा है ?

(A) ट्रैकबॉल
(B) स्पीकर
(C) प्रिंटर
(D) प्लोटर

12. 'कृत्रिम बुद्धिमत्ता का जनक' किसे कहा जाता है ?

(A) वी. राजारमण
(B) एलन ट्यूरिंग
(C) जॉन मैकार्थी
(D) टिम बर्नर्स-ली

13. संगणक में मेमोरी को दर्शाने वाली सबसे छोटी इकाई _____ है ।

(A) मेगाबाइट
(B) निबल
(C) बाइट
(D) बिट

7. The two States that have been recently in news for inter-state border dispute are

(A) Mizoram – Meghalaya
(B) Manipur – Meghalaya
(C) Mizoram – Arunachal Pradesh
(D) Mizoram – Assam

8. Match List – I with List – II and using the given codes, select the correct answer.

List – I (Player)	List – II (Sport)
a. Chinki Yadav	1. Horse Riding
b. Akshat Joshi	2. Shooting
c. Muskan Kirar	3. Hockey
d. Khamman Singh	4. Archery

Codes :

	a	b	c	d
(A)	1	2	3	4
(B)	2	1	3	4
(C)	2	1	4	3
(D)	1	2	4	3

9. With which sport is "Rajmata Vijya Raje Sindhia Competition" associated ?

(A) Cricket
(B) Hockey
(C) Football
(D) Chess

10. Yogesh Malviya has been awarded the Dronacharya Award – 2020 for which sport ?

(A) Kabaddi
(B) Wrestling
(C) Mallakhamba
(D) Boxing

11. Which of the following is an example of input devices ?

(A) Trackball
(B) Speaker
(C) Printer
(D) Plotter

12. Who is called the 'father of artificial intelligence' ?

(A) V. Rajaraman
(B) Alan Turing
(C) John McCarthy
(D) Tim Berners-Lee

13. The smallest unit of memory in a computer is

(A) Megabyte
(B) Nibble
(C) Byte
(D) Bit

14. ई-पाठशाला ऐप किससे सम्बंधित है ?

(A) पुस्तकों से

(B) छात्रवृत्ति से

(C) दवाईयों से

(D) कृषकों से

15. निम्न में से कौन-सा एंटी-वाइरस सॉफ्टवेयर है ?

(A) मंकी

(B) नार्टन

(C) एडवेयर

(D) ट्रोजन हॉर्स

16. 'राजा भोज' की राजधानी थी

(A) उज्जैन

(B) देवास

(C) धारानगरी

(D) भोपाल

17. गढ़ मण्डला का अंतिम यशस्वी और प्रतापी राजा कौन था ?

(A) राजा शाह

(B) विक्रम शाह

(C) शंकर शाह

(D) विष्णु शाह

18. साँची स्तूप का निर्माण किसने करवाया ?

(A) चन्द्रगुप्त प्रथम

(B) बिम्बिसार

(C) बिंदुसार

(D) अशोक

19. अमृतलाल वेगड़ का संबंध है

(A) मूर्तिकला

(B) चित्रकला

(C) गायन

(D) संगीत

20. 'भीलट बाबा' कौन है ?

(A) 'भारिया' के प्रमुख देवता

(B) 'भीलों' के प्रमुख देवता

(C) 'बैगा' के प्रमुख देवता

(D) 'सहरिया' के प्रमुख देवता

21. मध्यप्रदेश सरकार ने "बेटी बचाओ बेटी पढ़ाओ" योजना के अन्तर्गत निम्न में से कौन-से अभियान का प्रारम्भ किया है ?

(A) शंख

(B) लाडो

(C) उमा

(D) पंख

14. E-Pathshala App is related to

(A) Books

(B) Scholarship

(C) Medicine

(D) Farmers

15. Which of the following is an anti-virus software ?

(A) Monkey

(B) Norton

(C) Adware

(D) Trojan Horse

16. It was the Capital of 'Rajabhoj'

(A) Ujjain

(B) Dewas

(C) Dharanagari

(D) Bhopal

17. Who was the last successful and glorious King of Garha Mandala ?

(A) Raja Shah

(B) Vikram Shah

(C) Shankar Shah

(D) Vishnu Shah

18. Who built Sanchi Stupa ?

(A) Chandragupta first

(B) Bimbisara

(C) Bindusara

(D) Ashoka

19. Amritlal Vegad is related to

(A) Sculpture

(B) Painting

(C) Singing

(D) Music

20. Who is the 'Bhilat Baba' ?

(A) The Chief deity of the 'Bharia'

(B) The Chief deity of the 'Bhils'

(C) The Chief deity of the 'Baiga'

(D) The Chief deity of the 'Saharia'

21. Which of the following campaign has been initiated under the "Beti Bachao Beti Padhao" Scheme run by Madhya Pradesh Government ?

(A) Sankh

(B) Lado

(C) Uma

(D) Pankh

22. मध्यप्रदेश मुख्यमंत्री किसान कल्याण योजना में हितग्राही परिवार को एक वित्तीय वर्ष में कितनी राशि देने का प्रावधान है ?

(A) ₹ 4,000
(B) ₹ 5,000
(C) ₹ 6,000
(D) ₹ 7,000

23. मध्यप्रदेश शासन की मिशन ग्रामोदय योजना के निम्न कथनों पर विचार कीजिए ।

i. ग्रामीण क्षेत्रों के परिवारों को आवास की सुविधा प्रदान की जावेगी ।
ii. ग्रामीण क्षेत्रों की बुनियादी सेवाओं का भी विस्तार किया जावेगा ।
iii. इस योजना का प्रारम्भ भोपाल जिला मुख्यालय से किया गया ।

सही विकल्प चुनिए :

(A) i व iii
(B) ii व iii
(C) i व ii
(D) उपर्युक्त सभी

24. प्रो. शरद पगारे को कौन-सा सम्मान प्रदान किया गया ?

(A) सरस्वती सम्मान – 2020
(B) कालीदास सम्मान – 2020
(C) व्यास सम्मान – 2020
(D) तानसेन सम्मान – 2020

25. सिंगोरगढ़ का किला मध्यप्रदेश के किस जिले में स्थित है ?

(A) सागर
(B) दमोह
(C) जबलपुर
(D) छतरपुर

26. निम्न में से कौन-सा मोबाइल ऑपरेटिंग सिस्टम नहीं है ?

(A) पाम ऑपरेटिंग सिस्टम
(B) वेब ऑपरेटिंग सिस्टम
(C) सिम्बियन ऑपरेटिंग सिस्टम
(D) मैक ऑपरेटिंग सिस्टम

27. निम्न में से कौन-सा प्रोटोकॉल WWW का मूल प्रोटोकॉल है ?

(A) DSI
(B) HTTP
(C) NNTP
(D) FTP

28. यू.आर.एल. (URL) से क्या तात्पर्य है ?

(A) यूनिवर्सल रिफरेंस लोकेशन
(B) यूनिफॉर्म रिसोर्स लोकेटर
(C) यूनिवर्सल रिसोर्स लोकेटर
(D) यूनिवर्सिटी रिसोर्स लोकेटर

22. Under the Madhya Pradesh Mukhyamantri Kisan Kalyan Yojana, how much amount is to be given to beneficiary family in a financial year ?

(A) ₹ 4,000
(B) ₹ 5,000
(C) ₹ 6,000
(D) ₹ 7,000

23. Consider the following statements related to Mission Gramodaya Yojana of Madhya Pradesh Government.

i. Families living in rural areas will be provided with residential facility.
ii. Basic amenities of rural areas will be expanded.
iii. This scheme was inaugurated in the district headquarter of Bhopal.

Choose the correct option :

(A) i and iii
(B) ii and iii
(C) i and ii
(D) All of the above

24. Which award has been given to Prof. Sharad Pagare ?

(A) Saraswati Samman – 2020
(B) Kalidas Samman – 2020
(C) Vyas Samman – 2020
(D) Tansen Samman – 2020

25. Singorgarh fort is situated in which district of Madhya Pradesh ?

(A) Sagar
(B) Damoh
(C) Jabalpur
(D) Chhatarpur

26. Which of the following is **not** a mobile Operating System ?

(A) Palm OS
(B) Web OS
(C) Symbian OS
(D) Mac OS

27. Which of the following is the core protocol of WWW ?

(A) DSI
(B) HTTP
(C) NNTP
(D) FTP

28. URL stands for

(A) Universal Reference Location
(B) Uniform Resource Locator
(C) Universal Resource Locator
(D) University Resource Locator

29. निम्नलिखित में से कौन-सा ई-कॉमर्स की व्याख्या करता है ?

(A) इलेक्ट्रानिक सामान का व्यापार करना

(B) इलेक्ट्रिकल सामान का व्यापार करना

(C) इलेक्ट्रानिक रूप से व्यापार करना

(D) उपरोक्त सभी

30. ''कृत्रिम बुद्धिमत्ता या आर्टिफिसियल इंटेलीजेंस'' के लिये कौन-सी संगणक भाषा का प्रयोग किया जाता है ?

(A) जावा

(B) पास्कल

(C) प्रोलोग

(D) फोरट्रान

31. वेनगंगा नदी बहती है

(A) बालाघाट

(B) बैतुल

(C) खण्डवा

(D) डिण्डौरी

32. चंदेरी शहर प्रसिद्ध है

(A) साडियों के लिए

(B) काष्ठ कार्य के लिए

(C) बीडी उद्योग के लिए

(D) हीरा उद्योग के लिए

33. 'मटकी' नृत्य किस क्षेत्र में प्रसिद्ध है ?

(A) मालवा

(B) निमाड़

(C) बुण्देलखण्ड

(D) बघेलखण्ड

34. 'चिड़ीखो पर्यटक स्थल' किस जिले में स्थित है ?

(A) भोपाल

(B) राजगढ़

(C) रायसेन

(D) सीहोर

35. 'कवि बिहारी' किस राज्य से संबंधित थे ?

(A) मध्यप्रदेश

(B) बिहार

(C) राजस्थान

(D) उत्तरप्रदेश

36. राज्य मंत्री परिषद में मंत्रियों का वरिष्ठ से कनिष्ठ का सही क्रम निम्नलिखित में से कौन-सा है ?

(A) राज्य मंत्री, कैबीनेट मंत्री, उपमंत्री, संसदीय सचिव

(B) कैबीनेट मंत्री, उपमंत्री, राज्य मंत्री, संसदीय सचिव

(C) कैबीनेट मंत्री, राज्य मंत्री, संसदीय सचिव, उपमंत्री

(D) कैबीनेट मंत्री, राज्य मंत्री, उपमंत्री, संसदीय सचिव

29. Which of the following describe E-Commerce ?

(A) Business of Electronic Goods

(B) Business of Electrical Goods

(C) Doing Business Electronically

(D) All of the above

30. Which of the computer language is used in "Artificial Intelligence" ?

(A) JAVA

(B) Pascal

(C) PROLOG

(D) FORTRAN

31. Venganga river flows

(A) Balaghat

(B) Betul

(C) Khandwa

(D) Dindori

32. Chanderi is famous for

(A) Sarees

(B) Wooden work

(C) Bidi industry

(D) Diamond industry

33. 'Matki' dance is famous in which area ?

(A) Malwa

(B) Nimar

(C) Bundelkhand

(D) Baghelkhand

34. In which District is 'chidikho tourist place' located ?

(A) Bhopal

(B) Rajgarh

(C) Raisen

(D) Sehore

35. 'Poet Bihari' was related from

(A) Madhya Pradesh

(B) Bihar

(C) Rajasthan

(D) Uttar Pradesh

36. Which of the following correct order of Ministers from senior to junior in the State Council of Ministers ?

(A) Minister of State, Cabinet Minister, Deputy Minister, Parliamentary Secretary

(B) Cabinet Minister, Deputy Minister, Minister of State, Parliamentary Secretary

(C) Cabinet Minister, Minister of State, Parliamentary Secretary, Deputy Minister

(D) Cabinet Minister, Minister of State, Deputy Minister, Parliamentary Secretary

37. मध्यप्रदेश विधान सभा में विपक्ष के प्रथम नेता कौन थे ?

(A) विष्णु विनायक सरवटे

(B) विष्णु नाथ तामस्कर

(C) वी. जी. घाटे

(D) विश्वनाथ यादवराव तामस्कर

38. निम्नलिखित में से भारतीय संविधान के अनुसार कौन-सी संस्था राजनैतिक प्रशासनिक व्यवस्था में निर्णय लेने वाली सर्वोच्च संस्था है ?

(A) सत्ताधारी दल

(B) मंत्रीमण्डल

(C) विधान सभा

(D) सभी सामूहिक रूप से

39. भारतीय संविधान के किस अनुच्छेद में ग्राम पंचायतों में ग्राम सभा के गठन का प्रावधान है ?

(A) 243 क

(B) 243 ख

(C) 243 ग

(D) 243 घ

40. मध्यप्रदेश को कब पूर्ण रूप से ''खुले में शौच'' से मुक्त राज्य घोषित किया गया ?

(A) 16 जनवरी 2016 को

(B) 01 मई 2018 को

(C) 15 अगस्त 2016 को

(D) 02 अक्टूबर 2018 को

41. पन्ना जिले में हीरा उत्खनन का कार्य किसके द्वारा किया जा रहा है ?

(A) राष्ट्रीय खनिज विकास निगम

(B) भारत डायमंड बोर्स

(C) जिन्दल सेल्स कारपोरेशन

(D) अलरोजा

42. निम्नलिखित में से कौन-सा विकल्प सही नहीं है ?

(A) मध्यप्रदेश में पाया जाने वाला कोयला गोंडवाना शैल समूह में संचित है

(B) मध्यप्रदेश में पेंच-कन्हान घाटी कोयला क्षेत्र एक मुख्य कोयला उत्खनन क्षेत्र है

(C) सिंगरोली कोयला क्षेत्र का विस्तार मध्यप्रदेश और छत्तीसगढ़ में है

(D) पाथाखेड़ा कोयला क्षेत्र बैतुल जिले में स्थित है एवं सारणी तापीय विद्युत केन्द्र को कोयला प्रदान करता है

43. कौन-सा कोयला क्षेत्र मध्यप्रदेश में स्थित **नहीं है** ?

(A) कोरबा कोयला क्षेत्र

(B) मोहपानी कोयला क्षेत्र

(C) सोहागपुर कोयला क्षेत्र

(D) पाथाखेड़ा कोयला क्षेत्र

37. Who was the first leader of opposition of Madhya Pradesh Legislative Assembly ?

(A) Vishnu Vinayak Sarvate

(B) Vishnu Nath Tamashkar

(C) V. G. Ghate

(D) Vishwanath Yadavrao Tamashkar

38. Which of the following body is the highest decision making body in the politico-administrative system according to Indian Constitution ?

(A) Ruling party

(B) Cabinet

(C) Legislative Assembly

(D) Collectively all

39. In which Article of the Indian Constitution there is a provision to constitute Gram Sabha in Gram Panchayat ?

(A) 243 A

(B) 243 B

(C) 243 C

(D) 243 D

40. When Madhya Pradesh was declared as "Open Defection Free" State ?

(A) 16 January 2016

(B) 01 May 2018

(C) 15 August 2016

(D) 02 October 2018

41. By whom is the work of diamond mining done in Panna District ?

(A) National Mineral Development Corporation

(B) Bharat Diamond Bourse

(C) Jindal Sales Corporation

(D) Alrosa

42. Which of the following option is **not** correct ?

(A) The coal found in Madhya Pradesh is deposit in Gondwana rock group

(B) Pench Kanhan coalfield is an important coal mining area in Madhya Pradesh

(C) Singrauli coalfield is spread over Madhya Pradesh and Chhatisgarh

(D) Pathakheda coalfield is situated in Betul district and provides coal to Sarni Thermal Power Station

43. Which coalfield is **not** located in Madhya Pradesh ?

(A) Korba coalfield

(B) Mohpani coalfield

(C) Sohagpur coalfield

(D) Pathakheda coalfield

44. निम्नलिखित में से कौन-सा युग्म सही सुमेलित नहीं है ?

सिंचाई परियोजना	नदी/सहायक नदी
(A) बाण सागर परियोजना	सोन
(B) तवा परियोजना	तवा
(C) पेंच परियोजना	पेंच
(D) कोलार परियोजना	बेतवा

45. बालाघाट जिले को किस नदी की नहर से सिंचाई सुविधाएँ प्राप्त है ?

(A) वैनगंगा
(B) नर्मदा
(C) ताप्ती
(D) मतियारी

46. निम्नलिखित में से कौन-सी जनजाति ''बैगा जनजाति'' का उप-जनजाति **नहीं** हैं ?

(A) बिझवार
(B) नरोतिया
(C) बाडोया
(D) काठमैना

47. ''जीवन का भौतिक गुणवत्ता सूचकांक'' के घटकों के मूल्यों को मापने का पैमाना किसके बीच रहता है ?

(A) 0 से 1 के बीच
(B) 1 से 100 के बीच
(C) 1 से 50 के बीच
(D) 0 से 100 के बीच

48. 2011 की जनगणना के अनुसार मध्यप्रदेश का जनसंख्या घनत्व प्रति वर्ग किलोमीटर निम्न में से कौन-सा है ?

(A) 225/वर्ग किलोमीटर
(B) 236/वर्ग किलोमीटर
(C) 246/वर्ग किलोमीटर
(D) 382/वर्ग किलोमीटर

49. भारत की सर्वाधिक मोटी ''कोयले की परत'' मध्यप्रदेश के किस जिले में है ?

(A) छिंदवाड़ा
(B) सिंगरोली
(C) शहडोल
(D) बैतुल

50. केन्द्र सरकार द्वारा घोषित ''किसान सम्मान निधि योजना'' के तहत दी जा रही राशि में मध्यप्रदेश सरकार द्वारा कितनी अतिरिक्त राशि प्रतिवर्ष ''किसान कल्याण योजना'' के तहत दी जाती है ?

(A) 2,000 रुपये
(B) 3,000 रुपये
(C) 4,000 रुपये
(D) 5,000 रुपये

44. Which of the following pair is **not** correctly matched ?

Irrigation Project	River/ Tributary
(A) Ban Sagar Project	Son
(B) Tawa Project	Tawa
(C) Pench Project	Pench
(D) Kolar Project	Betwa

45. Balaghat District gets irrigation facility from the canal of which river ?

(A) Wainganga
(B) Narmada
(C) Tapti
(D) Matiyari

46. Which of the following tribe is **not** a sub-tribe of "Baiga Tribe" ?

(A) Bijhwar
(B) Narotia
(C) Badoya
(D) Kathmaina

47. The scale of measuring the values of the components of "Physical Quality of Life Index" lies between

(A) In between 0 to 1
(B) In between 1 to 100
(C) In between 1 to 50
(D) In between 0 to 100

48. As per 2011 Census, what is the population density of Madhya Pradesh from the following ?

(A) 225/sq. km.
(B) 236/sq. km.
(C) 246/sq. km.
(D) 382/sq. km.

49. In which district of Madhya Pradesh thickest layer of coal of India is found ?

(A) Chhindwara
(B) Singrauli
(C) Shahdol
(D) Betul

50. How much amount is being provided by the Madhya Pradesh Government under the "Kisan Kalyan Yojana" annually in addition to the amount announced by the Central Government under "Kisan Samman Nidhi Yojana" ?

(A) Rs. 2,000
(B) Rs. 3,000
(C) Rs. 4,000
(D) Rs. 5,000

SECTION – B

Civil Engineering

51. A riveted connection with 18 mm diameter rivets in double shear are used to connect 10 mm thick plates. If permissible stresses for rivets in shear and bearing are 80 MPa and 250 MPa respectively as well as for the plate in bearing is 250 MPa, then the strength of rivet is
(Values are rounded off to nearest integer value)

(A) 48750 N
(B) 23892 N
(C) 97500 N
(D) 47784 N

52. An ISLB 300 section is used as a simply supported beam having span of 5 m. If the sectional modulus is 4.889×10^5 mm^3 and plastic modulus is 5.4206×10^5 mm^3 then the shape factor of the beam is

(A) 1.10
(B) 0.90
(C) 0.80
(D) 0.72

53. A steel section is being used as tension member. The cross section area is 1100 mm^2 and yield strength of steel section is 250 MPa. If the design is governed by yielding of the cross section under axial tension, then the design strength (T_{ds}) of the member is

(A) 150 kN
(B) 250 kN
(C) 100 kN
(D) None of the above

54. A column base is subjected to combined action of axial load and moment. If the intensity of bearing pressure due to axial load is equal to maximum pressure generated due to moment, then the total bearing pressure between the column base and concrete is

(A) Uniform compression throughout
(B) Zero at one end and compression at other end
(C) Tension at one end and compression at other end
(D) Uniform tension throughout

55. Butt weld used in a welded connection is subjected to combined action of bearing, bending and shear. If bearing stress f_{br} = 200 MPa, bending stress f_b = 120 MPa and shear stress q = 90 MPa, then the equivalent stress f_e the butt weld subjected is equal to
(Values rounded off to integer)

(A) 420 MPa
(B) 200 MPa
(C) 270 MPa
(D) 320 MPa

56. An activated sludge process operates at a flow rate of 540 m^3/d having influent BOD_5 of 200 mg/L. Volume of aeration tank is 60 m^3 and biomass concentration in aeration tank is 3000 mg/L. The Food to Microorganism (F/M) ratio is

(A) 0.4
(B) 0.6
(C) 0.8
(D) 0.2

57. An egg shaped section of sewer

(A) Is economical than circular section
(B) Provides self-cleansing velocity
(C) Is more stable than circular
(D) Is easy to construct

58. Suitable layout of distribution system for a city with road of rectangular pattern

(A) Grid iron system
(B) Ring system
(C) Radial system
(D) Dead end system

59. Dissolved oxygen in stream is

(A) Minimum at noon
(B) Maximum at mid night
(C) Same throughout the day
(D) Maximum at noon

60. In children "Methaemoglobinaemia" disease is caused by

(A) Conversion of nitrites to nitrates
(B) Due to total nitrogen
(C) Conversion of nitrates to nitrites
(D) Reaction between haemoglobin and CO_2

61. Find the specific energy of flowing water through a rectangular channel of width 5m, when the depth of water is 3m and discharge is 10m^3/s.

(A) 30.2m
(B) 3.0226m
(C) 3022.4cm
(D) 3.0224cm

62. Find the rate of flow of water through a rectangular channel of 6m wide and 3m deep, when it is running full. The bed slope of channel is 1 in 2000. Take Chezy's constant C = 55.

(A) 27.108 m^3/s
(B) 2.7108 m^3/s
(C) 1.506 m^3/s
(D) 0.2710 m^3/s

63. Which of the following devices are usually used in measuring pipe flow ?

(A) Mouthpiece
(B) Cipolletti weir
(C) Pitot tube
(D) Venturimeter

64. The most desirable location for the surge tank is
(A) Immediately upstream of the turbine
(B) Immediately upstream of the tail water
(C) Immediately downstream of the reservoir
(D) Immediately upstream of the reservoir

65. For the laminar boundary layer, its thickness is expressed by the relationship (Where R_x is the local Reynolds number based on distance x from the leading edge)
(A) $\delta = 0.664x/R_x^{0.20}$
(B) $\delta = 0.664x/\sqrt{R_x}$
(C) $\delta = 5x/\sqrt{R_x}$
(D) $\delta = 1.75x/\sqrt{R_x}$

66. The size of the wooden sleeper used on broad gauge is
(A) 275 cm × 32 cm × 13 cm
(B) 275 cm × 25 cm × 18 cm
(C) 275 cm × 25 cm × 13 cm
(D) 275 cm × 25 cm × 32 cm

67. Fish plates used in Indian Railway should have the carbon contents equal to
(A) 0.38% to 0.47%
(B) 0.30% to 0.42%
(C) 0.25% to 0.42%
(D) 0.15% to 0.47%

68. Morgan keys are suitable for CI chairs plate sleepers and metal sleepers. There specifications are
(A) 12 cm long with a taper of 1 in 48
(B) 12 cm long with a taper of 1 in 30
(C) 18 cm long with a taper of 1 in 48
(D) 18 cm long with a taper of 1 in 32

69. Train resistance due to gradient is given as
(A) Weight of train × rate of grade
(B) Weight of train × $\frac{1}{\text{rate of grade}}$
(C) Weight of train × $\frac{2}{\text{rate of grade}}$
(D) Twice the weight of train × rate of grade

70. Worn up rail should **not** be used if the wear exceeds the limit between
(A) 7% to 10%
(B) 3% to 4.5%
(C) 10% to 12.5%
(D) 5% to 8.0%

71. If drainage is permitted throughout the test, during the application of both normal and shear stresses, so that full consolidation occurs and no excess pore pressure is set-up at any stage of the test, is known as
(A) Drained test
(B) Quick test
(C) C-U test
(D) Compression test

72. In site exploration, depth upto which the increase in pressure is likely to cause shear failure is known as
(A) Significant depth
(B) Failure depth
(C) Pressure depth
(D) Exploration depth

73. The minimum net pressure intensity causing shear failure of soil, is known as
(A) Safe bearing capacity
(B) Net safe bearing capacity
(C) Ultimate bearing capacity
(D) Net ultimate bearing capacity

74. Which of the following is a characteristic of general shear failure ?
(A) Failure is accompanied by compressibility of soil
(B) Failure is sudden
(C) Bulging of shearing mass of soil
(D) Depression of soil

75. The piles that are used for protecting structures from ships and floating objects are
(A) Anchor piles
(B) Compaction piles
(C) Batter piles
(D) Fender piles

76. The stress in cement concrete pavement changes
(A) Seasonally
(B) Annually
(C) Daily
(D) None of the above

77. The rise of water level near bridge due to obstruction caused by the construction of bridge is called as
(A) Superlex
(B) Afflux
(C) Dulex
(D) Scouring

78. According to ICAO, all markings on the runways are
(A) Yellow
(B) White
(C) Black
(D) Red

79. The maximum transverse grade as per ICAO of 'D' type airport is
(A) 1.5%
(B) 2.0%
(C) 2.5%
(D) 3.0%

80. Airport elevation is the reduced level above mean sea level of
(A) Control tower
(B) Hanger
(C) Highest point of the landing area
(D) Lowest point of the landing area

81. A steel rod of 2.5 m in height and area of 125 mm^2 is subjected to a pull of 30kN. If Young's modulus is 200 GPa, the elongation of the rod will be
(A) 3 mm
(B) 30 mm
(C) 300 mm
(D) 0.3 mm

82. For a given material, if E, G, and ν are Young's modulus, modulus of rigidity and Poisson's ratio respectively, then the relation E =
(A) $2G(1 + \nu)$
(B) $2G(1 - \nu)$
(C) $2G/(1 + \nu)$
(D) $2G/(1 - \nu)$

83. Every material obeys the Hook's law within its
(A) Elastic limit
(B) Limit of proportionality
(C) Plastic limit
(D) Modulus of elasticity

84. A framed structure is perfect, if the number of members are ____ (2J – 3), where J is joint.
(A) Equal to
(B) Less than
(C) Greater than
(D) None of the above

85. The strain energy per unit volume due to direct stress 'σ' and strain '∈' is equal to the
(A) $2\sigma^2/E$
(B) $2E\epsilon^2$
(C) $\frac{1}{2}E\epsilon^2$
(D) None of the above

86. The limitation of Bligh's theory observed as
(A) Made no distinction between horizontal and vertical creep
(B) Made no explanation of exit gradient
(C) Made no distinction between outer and inner faces of sheet piles
(D) All the above

87. A device where silt is excluded from water entering the canal is known as the following and placed at
(A) Silt ejector placed infront of head regulator
(B) Silt ejector placed behind the head regulator
(C) Silt excluder placed infront of head regulator
(D) Silt excluder placed behind the head regulator

88. Which statement is **not** true for canal lining ?
(A) Minimize the seepage losses
(B) Reduce maintenance of canal
(C) Prevent erosion
(D) Decrease discharge

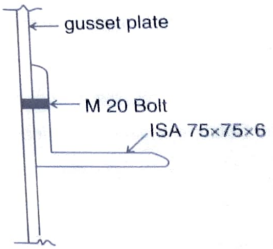
89. A larger length of groyne pointing upstream used for river training works is known as
(A) Attracting Groyne
(B) Repelling Groyne
(C) Deflecting Groyne
(D) Sedimentary Groyne

90. In cross drainage works, if natural drainage is carried over the canal where F.S.L. of the canal is lower than the underside of the trough carrying drainage water, then it can be said as
(A) Aqueduct
(B) Syphon aqueduct
(C) Canal syphon
(D) Super passage

91. In a bracket with riveted connections the no. of rivets (n) essential for resisting the external moment M is equal to _____. Where, R – rivet value, m – no. of rivet lines and p – pitch of rivets
(A) $n = \sqrt{\frac{6Rm}{Mp}}$
(B) $n = \sqrt{\frac{6M}{mpR}}$
(C) $n = \sqrt{\frac{6M}{mR}}$
(D) $n = \sqrt{\frac{6Mm}{pR}}$

92. If the fillet welds are subjected to a combination of normal stress (f_a) and shear stress (q), the equivalent stress (f_e) is
(A) $\sqrt{f_a^2 + q^2}$
(B) $\sqrt{3f_a^2 + 3q^2}$
(C) $\sqrt{f_a^2 + 3q^2}$
(D) $\sqrt{3f_a^2 + q^2}$

93. An angle ISA 75 × 75 × 6 is connected to a gusset plate through single leg as shown in figure. Bolt used are M 20 grade 4.6. What is net area of angle ?



(A) 732 mm^2
(B) 862 mm^2
(C) 600 mm^2
(D) 432 mm^2

94. A steel structure subjected to a combination of Dead Load (DL) and Earthquake Load (EL), the partial safety factors for limit state of strength are ____ and _____ respectively.

(A) 1.2; 1.2

(B) 1.5; 1.0

(C) 1.5; 1.5

(D) 1.0; 1.2

95. If the intermediate transverse stiffners to web are **not** subjected to external loading, then it shall be designed to withstand a minimum shear force (in kN/mm) of

(Where, t_w = Web thickness in mm,

b_s = Outstand width of the stiffner in mm.)

(A) $\frac{t_w^3}{5b_s}$

(B) $\frac{t_w^2}{5b_s}$

(C) $\frac{5t_w^2}{b_s}$

(D) $\frac{t_w}{5b_s^2}$

96. V_v/V_s =

(A) Porosity

(B) Water content

(C) Void ratio

(D) Degree of saturation

97. At shrinkage limit, the soil is

(A) Dry

(B) Fully Saturated

(C) Partially Saturated

(D) None of the above

98. If the natural water content of the soil mass lies between its liquid limit and plastic limit, the soil mass is said to be in

(A) Liquid state

(B) Semi-solid state

(C) Solid state

(D) Plastic state

99. The co-efficient of compressibility of soil is the ratio of

(A) Stress to strain

(B) Strain to stress

(C) Stress to settlement

(D) Rate of loading to settlement

100. Under-reamed piles are generally

(A) Driven piles

(B) Pre-cast piles

(C) Bored piles

(D) None of the above

101. The activity does **not** involve consumption of resources and does **not** need any time is called as

(A) Negative activity

(B) True activity

(C) Dummy activity

(D) Positive activity

102. The difference between total float and free float is defined as

(A) Independent float

(B) Interference float

(C) Dependent float

(D) Independent slack time

103. Which of the following contract is **not** measurement contract ?

(A) Lump-sum contract

(B) Item rate contract

(C) Percentage rate contract

(D) None of the above

104. Worker's productivity is defined as

(A) Total work done per week

(B) Quantity of work done per man hour

(C) Quantity of work done per month

(D) None of the above

105. The cost slope is given by

(A) $\frac{\text{Normal cost} - \text{Crash cost}}{\text{Normal time} - \text{Crash time}}$

(B) $\frac{\text{Crash cost} - \text{Normal cost}}{\text{Crash duration} - \text{Normal time}}$

(C) $\frac{\text{Crash cost} - \text{Normal cost}}{\text{Normal duration} - \text{Crash duration}}$

(D) None of the above

106. A simply supported beam of span 'l' carries a concentrated load 'W' at the centre. The bending moment at mid-point will be

(A) $\frac{1}{8}Wl$

(B) $\frac{1}{2}Wl$

(C) $\frac{1}{4}Wl$

(D) $\frac{1}{8}Wl^2$

107. The two hinged arch is an example of

(A) Statically indeterminate structure

(B) Statically determinate structure

(C) Both (A) and (B)

(D) None of the above

108. The bending equation is written as

(A) $\frac{I}{M} = \frac{\sigma}{y} = \frac{E}{R}$

(B) $\frac{M}{I} = \frac{\sigma^2}{y} = \frac{E^2}{R^2}$

(C) $\frac{M}{I} = \frac{\sigma}{y} = \frac{E}{R}$

(D) $\frac{M^2}{I} = \frac{\sigma^2}{y} = \frac{E^2}{R}$

[P.T.O.

109. For ductile materials, the most appropriate failure theory is

(A) Maximum principal stress theory

(B) Maximum shear stress theory

(C) Maximum principal strain theory

(D) Shear-strain energy theory

110. The maximum principal stress theory was postulated by

(A) Rankine

(B) St. Venant

(C) Mohr

(D) Tresca

111. Width of Ballast section at bottom of track for B.G. is

(A) 4200 mm

(B) 4600 mm

(C) 4800 mm

(D) 5000 mm

112. Which type of transition curve is mostly used by Indian Railways ?

(A) Cubic parabola curve

(B) Spiral curve

(C) Sine curve

(D) Lemniscate of Bernoulli's curve

113. The displacement of the track from its original position due to insufficient expansion gap in the track is known as

(A) Distorting

(B) Hogging

(C) Creeping

(D) Buckling

114. Heel Divergence is defined as

(A) Ratio of length of tongue rail to switch angle

(B) Ratio of switch angle to length of tongue rail

(C) Multiplication of length of tongue rail and switch angle

(D) Multiplication of wing rail and switch angle

115. The outer rim of the railway wheels are coned to prevent the rubbing of the wheel flanges with sides of the top flanges of the rail at a slope of

(A) 1 in 20

(B) 1 in 24

(C) 1 in 26

(D) 1 in 30

116. The deflection of a beam with straight tendon's having uniform eccentricity below the centroid axis is given by (where P = effective prestressing force , e = eccentricity, L = length of beam, a = deflection)

(A) $a = -\frac{PeL^2}{12EI}$

(B) $a = -\frac{PeL^3}{12EI}$

(C) $a = -\frac{PeL^2}{8EI}$

(D) $a = -\frac{PeL^3}{8EI}$

117. The foundation that is used when bearing power of soil is so low that independent column footings are impracticable and pile foundation **cannot** be used advantageously is

(A) Strap foundation

(B) Combined foundation

(C) Raft or Mat foundation

(D) Rectangular combined foundation

118. As per IS : 1343 : 1980, in prestressed concrete minimum grade of concrete for pre-tensioned system will be

(A) M 40

(B) M 55

(C) M 30

(D) M 20

119. As per IS : 456 : 2000, in case of flat slab the minimum thickness of slab shall be

(A) 100 mm

(B) 115 mm

(C) 125 mm

(D) 150 mm

120. As per IS : 1893 : 2002, the critical damping ratio in case of steel structures, concrete structures and earthen structures are respectively

(A) 5%, 2% and 20%

(B) 2%, 20% and 5%

(C) 20%, 5% and 2%

(D) 2%, 5% and 20%

121. Classification of road in India was done by

(A) Central Government

(B) Indian Road Congress

(C) Ministry of Surface Transport

(D) Nagpur Road Plan

122. The drainage layer in the highway pavement is known as

(A) Base course

(B) Sub-base course

(C) Surface course

(D) Subgrade

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123. If R is the radius of a main curve and L is the length of the transition curve, the shift of the curve is

(A) $L^2/24\ R$

(B) $L/24\ R$

(C) $L^4/24\ R$

(D) $L^3/24\ R$

124. In California Bearing Ratio test, the value of CBR is calculated at

(A) 2.5 mm penetration only

(B) 5.0 mm penetration only

(C) Both 2.5 mm and 5.0 mm penetrations

(D) 7.5 mm penetration only

125. For the construction of cement concrete pavement slabs, the desirable limit of maximum aggregate crushing value is

(A) 35%

(B) 30%

(C) 27%

(D) 24%

126. The water required for firefighting (known as fire-demand) may be computed using National Board of Fire underwrites formula given as $Q = 4637\sqrt{P}\,(1 - 0.01\sqrt{P})$ where

(A) Q = quantity of water in m^3/s and P is more than 2,00,000

(B) Q = quantity of water in L/min and P is more than 2,00,000

(C) Q = quantity of water in m^3/s and P is less than or equal to 2,00,000

(D) Q = quantity of water in L/min and P is less than or equal to 2,00,000

127. Modern turbidimeters working on the principles of scattering of light, are known as

(A) Jackson turbidimeter

(B) Modern ion chromatography

(C) Nephlo turbidimeter

(D) Atomic turbidimeter

128. In a waste water treatment plant, grit chamber are designed to remove particles by using the principles of

(A) Type – I settling

(B) Type – II settling

(C) Type – III settling

(D) Type – IV settling

129. London Smog was primarily caused by

(A) Burning of oil

(B) Burning of coal

(C) Eruption of volcano

(D) None of the above

130. Which one of the following method is generally **not** adopted for safe disposal of biomedical wastes ?

(A) Shredding after disinfection

(B) Incineration

(C) Sanitary landfill

(D) None of the above

131. A singly reinforced beam 200 mm wide is 400 mm deep to the center of the tensile reinforcement. Determine the limiting moment of resistance of the beam section. Use M 20 Concrete and Fe 250 Steel.

(A) 9.536 kN.m

(B) 95.36 kN.m

(C) 953.60 kN.m

(D) 80.00 kN.m

132. For bond stress of deformed bars conforming to IS 1786, design bond stress of plain bars in tension in limit state method shall be increased by

(A) 25%

(B) 40%

(C) 60%

(D) 75%

133. The Hoop tension per meter height for circular tank with a flexible joint between the walls and base is given by (where w = specific wt. of water, D = internal diameter of tank, h = depth and T = hoop tension)

(A) $D = wh \times \frac{T}{2}$

(B) $T = wh \times \frac{D}{4}$

(C) $T = wh \times \frac{D}{6}$

(D) $T = wh \times \frac{D}{2}$

134. What is the recommended value of effective length, if the column is effectively held in position and fixed against rotation in both ends ? (l = unsupported length of column)

(A) 0.65 l

(B) 0.80 l

(C) 1.00 l

(D) 1.20 l

135. The development length (L_d) of a deformed bar (ϕ = nominal diameter) as per IS : 456 : 2000 in limit state design is given by (where σ_s = stress in a bar at the section considered at design load, τ_{bd} = design bond stress)

(A) $L_d = \frac{\sigma_s \phi}{4.5\tau_{bd}}$

(B) $L_d = \frac{\sigma_s \phi}{5.0\tau_{bd}}$

(C) $L_d = \frac{\tau_{bd} \cdot \phi}{5.0\sigma_s}$

(D) $L_d = \frac{\sigma_s \cdot \phi}{4\tau_{bd}}$

136. An object placed in a fluid stream may experience drag and lift forces. These forces are due to

(A) Viscosity and turbulence

(B) Pressure and gravity

(C) Pressure and turbulence

(D) Pressure and viscosity

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137. In 1 in 40 model of a spillway, the velocity and discharge are 2m/s and 2.5 m^3/s, respectively. Find the velocity in the prototype.

(A) 126.5 m/s

(B) 12.65 mm/s

(C) 12.65 m/s

(D) 0.126 m/s

138. The flownet is a graphical representation of _____ irrotational flow.

(A) One dimensional

(B) Two dimensional

(C) Three dimensional

(D) None of the above

139. The energy loss in pipe is due to

(A) Surface roughness only

(B) Turbulent shear stress

(C) Friction offered by pipe wall and viscous action

(D) Viscous action only

140. A wide unlined channel carrying silt free water has a depth of 2 m. The maximum tractive stress permissibles on the bed to prevent scour is 1.96 N/m^2. What is maximum slope that can be given to the channel ?

(A) 3 in 10^4

(B) 2 in 10^4

(C) 1 in 10^3

(D) 1 in 10^4

141. Which is **not** the hydro power scheme / plant ?

(A) Run-off river Scheme

(B) Storage Scheme

(C) Pumped Storage Scheme

(D) Canal Scheme

142. Measurements of duty should **not** be taken

(A) At the head of the main canal

(B) At the head of the branch canal

(C) At the middle of the canal

(D) At the outlet of the canal

143. A unit hydrograph consists of a hydrograph of direct runoff resulting from the following mentioned below which takes place uniformly over the basin at a uniform rate during a specified period of time

(A) One cm of rainfall

(B) Ten cm of rainfall

(C) One cm of effective rainfall

(D) Ten cm of effective rainfall

144. Ground water is widely distributed under the ground and the geologic formation which can absorb water but **cannot** transmit significant amount of water known as with example

(A) Aquiclude such as shale

(B) Aquiclude such as basalt

(C) Aquifuge such as clay

(D) Aquifuge such as granite

145. Stilling basin is used for

(A) Drip irrigation

(B) Sprinkler irrigation

(C) Dissipation of energy

(D) Cross drainage work

146. If N = No. of years prescribed for completion of project

A = Maximum value of works completed during last 5 years

B = Value of on going work in the next N years

then Bid capacity is calculated as

(A) 2AB – N

(B) 2BN – A

(C) 2AN – B

(D) None of the above

147. Building and other construction workers Central Rules, 1998 is **not** related

(A) To ensure all mechanical equipments are provided with safety features

(B) To ensure minimum salary to be provided to all labours

(C) To ensure workers do not lift weight beyond prescribed limit

(D) To maintain clean and hygienic conditions on site

148. A concrete mixer having a initial cost of Rs. 2 lakh and a salvage value of Rs. 50,000 at the end economic life of 5 years. What will be annual depreciation each year using straight line method ?

(A) Rs. 30,000

(B) Rs. 40,000

(C) Rs. 50,000

(D) Rs. 33,333

149. Performance security is refunded to the contractor

(A) After issue of defect liability certificate

(B) After issue of completion certificate

(C) As per contractor demand after completion of work

(D) None of the above

150. The estimate prepared for approval to include additional item of work during execution which was **not** foreseen in initial stage is called as

(A) Rough order of magnitude estimate

(B) Cube rate estimate

(C) Indicative cost estimate

(D) Supplementary estimate