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CONTENTS

தமிழ்- (பொதுத்தமிழ்).....	2
ENGLISH.....	5
MATHEMATICS	8
PHYSICS	11
CHEMISTRY.....	14
BOTANY.....	18
ZOOLOGY.....	22
BIOLOGY BIO-ZOOLOGY.....	25
BIO BOTANY	29
ACCOUNTANCY.....	31
COMMERCE	35
COMPUTER APPLICATION	38
COMPUTER SCIENCE.....	42
ECONOMICS.....	45
GEOGRAPHY	48
HISTORY	52
TRENDING COURSES.....	56

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அல்ட்ரா கலை மற்றும் அறிவியல் கல்லூரி தமிழ்- (பொதுத்தமிழ்)

- ஒரு கிராமத்து நதியின் ஆசிரியர் யார்?
அ) வாணிதாசன் ஆ) புதுமைபித்தன்
இ) சிற்பிபாலசுப்பிரமணியன் ஈ) கல்கி
- திறனாய்வுக்கலையை அறிமுகப்படுத்தியவர்களில் குறிப்பிடத்தக்கவர் யார்?
அ) தா.ஞானமூர்த்தி ஆ) கால்டுவெல்
இ) கீடஸ் ஈ) தி.சு.நடராஜன்
- தண்டியலங்காரம் எந்த நூலைத் தழுவி எழுதப்பட்டுள்ளது?
அ) தொல்காப்பியம் ஆ) வீரசோழியம்
இ) இலக்கணவிளக்கம் ஈ) காவ்யதர்சம்
- கவிகேசரி சாமிதீட்சிதர் ----- என்னும் நூலை வெளியிட்டார்?
அ) சூர்யோதயம் ஆ) கர்மயோகி
இ) ஒளிப்பறவை ஈ) வம்சமணிதீபிகை
- இலக்கியத்தையும் மொழியையும் ஒருசேரப் பேசுகின்ற இலக்கண நூல் எது?
அ) யாப்பருங்கலக்காரிகை ஆ) தண்டியலங்காரம்
இ) தொல்காப்பியம் ஈ) நன்னூல்
- நக்கீரர் எழுதிய பத்துப்பாட்டு நூல்கள் எத்தனை?
அ) ஒன்று ஆ) இரண்டு இ) மூன்று ஈ) நான்கு
- உத்தமச்சோழன் எழுதிய நூலின் பெயர்?
அ) முதல்கல் ஆ) பிறகொருநாளர் கோடை
இ) இளந்தமிழே ஈ) கம்பர்
- தமிழில் திணைப்பாகுபாடு ----- அடிப்படையில் பகுக்கப்படுகிறது?
அ) பொருட்குறிப்பு ஆ) சொற்குறிப்பு
இ) தொடர்குறிப்பு ஈ) எழுத்துக்குறிப்பு
- வெள்ளச் சமவெளிகள் அழியக் காரணம் -----
அ) பருவநிலைமாற்றம் ஆ) மணல் அள்ளுதல்
இ) பாறைகள் இல்லாமை ஈ) நிலத்தடிநீர் உறிஞ்சுப்படுதல்
- குடும்பம் எனும் சொல் முதன்முதலில் எந்த நூலில் பயின்றுவருகிறது?
அ) திருக்குறள் ஆ) நாலடியார்
இ) திரிகடுகம் ஈ) ஏலாதி
- சுஃபித்துவப் படைப்பான மஸ்னவி என்ற நூலின் ஆசிரியர் யார்?
அ) ஜலாலுத்தீன் ரூமி ஆ) யுவான்கவாங்
இ) மாலுமி ஈ) கால்டுவெல்
- கம்பராமாயணத்தில் இடம்பெற்றுள்ள அயோத்திய காண்டம் எத்தனையாவது காண்டம்?
அ) ஒன்று ஆ) இரண்டு இ) மூன்று ஈ) ஐந்து
- உரிமைத்தாகம் என்ற நூலின் ஆசிரியர் யார்?
அ) பூமணி ஆ) அப்துல் ரகுமான் இ) மீரா ஈ) சிற்பி
- 'ஆலும் வேலும் பல்லுக்குறுதி நாலும் இரண்டும் சொல்லுக்குறுதி' என்னும் பழமொழி எந்தெந்த நூலைக் குறிப்பிடுகின்றது?
அ) நாலடியார், திருக்குறள் ஆ) பழமொழி, நான்குமணிக்கடிகை
இ) திரிகடுகம், ஏலாதி ஈ) இன்னாநாற்பது, இனியவைநாற்பது

15. 'வள்ளுவனைப் பெற்றதால் பெற்றதேபுகழ் வையகமே' ----- எனப் புகழ்ந்து பாடியவர் யார்?
 அ) பாரதியார் **ஆ) பாரதிதாசன்**
 இ) கம்பர் **ஈ) இளங்கோவடிகள்**
16. 'மஞ்சள் குளிப்பாட்டி மையிட்டு முப்பாலும் மிஞ்சப் புகட்ட மிகவளர்ந்தாய்' ----- எனக் குறிப்பிடும் நூல் எது?
 அ) முக்கூடற் பள்ளு **ஆ) தமிழ்விடுதலா**
 இ) பரணி **ஈ) மாலை**
17. தமிழ்த்தாத்தா என்று அழைக்கப்படுபவர் யார்?
அ) உ.வே.சாமிநாதையர் **ஆ) வ.உ.சிதம்பரனார்**
 இ) மு.வரதராசன் **ஈ) பாரதியார்**
18. சுரதாவின் இயற்பெயர் -----
 அ) சுப்புரத்தினதாசன் **ஆ) இராஜகோபாலன்**
 இ) முத்தையா **ஈ) சக்திதாசன்**
19. நடை என்னும் சிற்றிதழை நடத்தியவர் யார்?
அ) சி.மணி **ஆ) மணிபாலன்** **இ) வைரமுத்து** **ஈ) பெஸ்கி**
20. வாயிலோயோ! வாயிலோயோ எனத் தொடங்கும் நூல் எது?
 அ) நற்றிணை **ஆ) குறுந்தொகை**
இ) புறநானூறு **ஈ) கலித்தொகை**
21. கலிவெண்பாவின் அடிவரையறையைக் குறிப்பிடுக.
 அ) 2 **ஆ) 3** **இ) 4** **ஈ) 13**
22. செயின்ட் ஜார்ஜ் கோட்டைக்கு உள்ளே வீடுகள் இருந்தபகுதி ----- நகரம்.
 அ) கருப்புநகரம் **ஆ) வெள்ளைநகரம்**
 இ) வண்ணாரப் பேட்டை **ஈ) சிந்தாதறிப் பேட்டை.**
23. அருவின் நகரம் என்று அழைக்கப்படுவது?
 அ) மதுரை **ஆ) சென்னை** **இ) தர்மபுரி** **ஈ) கோவை**
24. இந்தியாவின் முதல் பொதுநூலகம் எங்கு அமைந்துள்ளது?
அ) கன்னிமாரா நூலகம் **ஆ) அண்ணாநூற்றாண்டு நூலகம்**
 இ) கீழ்த்திசைச்சுவடிகள் நூலகம் **ஈ) தமிழாய்வு நூலகங்கள்**
25. வாடியபயிரைக் கண்டபோது வாடியவள்ளல் யார்?
 அ) தாயுமானவர் **ஆ) பட்டினத்தார்**
இ) இராமலிங்கவள்ளலார் **ஈ) பத்திரிகிரியார்**
26. தேவார நூல்களைத் தொகுத்தவர் யார்?
 அ) நாநமுனி **ஆ) நக்கீரர்** **இ) கபிலர்** **ஈ) நம்பியாண்டார் நம்பி**
27. கடலுக்கு அருகில் மணல் திட்டிகளில் தேங்கியிருக்கும் பகுதிக்கு----- என்றுபெயர்?
அ) உப்பங்கழி **ஆ) அளம்** **இ) பாறைகள்** **ஈ) படிவம்**
28. களிற்றுயானைநிரையில் எத்தனைப் பாடல்கள் இடம்பெற்றுள்ளன.
 அ) 80 **ஆ) 100** **இ) 120** **ஈ) 400**
29. தலைக்குளம் என்ற நூலின் ஆசிரியர் யார்?
அ) தோப்பில் முகமதுமீரான் **ஆ) அப்துல் ரகுமான்**
 இ) இராஜகோபாலன் **ஈ) மாதவையா**
30. தொல்காப்பியர் -----ஒன்றையே அணியாகக் கூறினார்?
 அ) உருவகம் **ஆ) உவமை** **இ) உவமேயம்** **ஈ) படிமம்**

31. நாடகத்தை ----- என அழைப்பர்?
 அ) காட்சியின் ஆற்றல் ஆ) திரைக்கதை
 இ) திரைக்காட்சி ஈ) ஒற்றைக்கோணக்கலை
32. பிரான்சின் லூமியர் சகோதரர்கள் எந்தக் கருவியோடு சேர்த்து படப்பிடிப்பிற்கு திரைப்படம் என அழைத்தனர்.
 அ) எடிசன் ஆ) ஜார்ஜ்மிலி
 இ) லூமியர் சகோதரர்கள் ஈ) லிட்டில் டிராம்ப்
33. ஹிட்லரை உருவகப்படுத்தி ஹென்கோல் என்னும் கதைப்பாத்திரத்தை உருவாக்கியவர்?
 அ) சுஜாதா ஆ) செழியன் இ) அயன்பாலா ஈ) சாப்ளின்
34. குடிமக்கள் காப்பியம் என்று அழைக்கப்படும் நூல் எது?
 அ) சிலப்பதிகாரம் ஆ) மணிமேகலை
 இ) வளையாபதி ஈ) குண்டலகேசி
35. தமிழில் கிடைக்கப்பெற்ற முதல் இலக்கண நூல் எது?
 அ) தொல்காப்பியம் ஆ) நன்னூல்
 இ) குட்டித்தொல்காப்பியம் ஈ) வீரசோழியம்
36. மெய்ப்பாடு எத்தனை வகைப்படும்?
 அ) 4 ஆ) 5 இ) 8 ஈ) 9
37. ஐம்பெருங்காப்பியங்கள் என்ற சொற்றொடரை தம் உரையில் பயன்படுத்தியவர் யார்?
 அ) பவணந்திமுனிவர் ஆ) மயிலைநாதர்
 இ) ஆறுமுகநாவலர் ஈ) பெருஞ்சித்திரனார்
38. 'எப்பொருள் யார்யார்வாய்க் கேட்பினும் அப்பொருள் மெய்ப்பொருள் காண்பது அறிவு' -- இக்குறளில் பயின்றுவரும் அணியினைக் குறிப்பிடுக.
 அ) வேற்றுமை அணி ஆ) உவமை அணி
 இ) தீவக அணி ஈ) சொற்பொருள் பின்வருநிலையணி
39. ஒவ்வொருநாளும் சூரியன் புதிது என்று குறிப்பிடுபவர் யார்?
 அ) ஹிராக்ஸிடஸ் ஆ) இறையன்பு
 இ) கலைவாணி ஈ) தமிழ்நதி
40. யாழ்ப்பாணப் பல்கலைக்கழகத்தில் கலைத்துறையில் பட்டம் பெற்றவர் ?
 அ) தமிழ்நதி ஆ) முகமதுராவுத்தர்
 இ) பாலச்சந்திரன் ஈ) ஜலாலுத்தீன் ருமி
41. 'பாரதமக்களின் பரிதாபச் சிந்து' எந்த நூலிலிருந்து எடுத்தாளப்பட்டுள்ளது?
 அ) கும்மிப்பாட்டு ஆ) நாட்டுப்புறக்கலைகள்
 இ) புராணங்கள் ஈ) தேயிலைத்தோட்டப்பாட்டு
42. 'காய்நெல் அறுத்துக் கவளம் கொளினே மாநிறைவு இல்லதும் பல்நாட்டு ஆகும' என்ற பாடலின் ஆசிரியர் யார்?
 அ) பிசிராந்தையார் ஆ) ஒளவையார்
 இ) கோவூர்கிழார் ஈ) அதியமான்
43. தமிழ் மொழியை எழுதப் பயன்படுத்தப்பட்ட பழந்தமிழ் வரிவடிவத்தை ----- என்று அழைத்தனர்.
 அ) தமிழ்ப்பிராமி ஆ) ஆதன்
 இ) தமிழ் பழந்தமிழ் ஈ) பழந்தமிழ்
44. பதிற்றுப்பத்தில் இடம்பெற்ற சேர அரசர்களின் பெயர்கள் ----- கல்வெட்டில் இடம்பெற்றுள்ளது.
 அ) புகளூர் ஆ) கீழடி இ) ஜராவதம் ஈ) பிரகதீஸ்வரர்

45. சாபவிமோசனம் , அகலிகை சிறுகதையில் தொன்மங்களைப் பயன்படுத்தியவர்?
 அ) கு.அழகிரிசாமி ஆ) புதுமைபித்தன்;
 இ) ஜெயமோகன் ஈ) இராமகிருஷ்ணன்
46. தொன்மம் என்பதன் பொருள் யாது?
 அ) புதுமை ஆ) இளமை இ) புகழ்ச்சி ஈ) பழமை
47. 'பலர் துஞ்சவும் தாம் துஞ்சான் -விழித்திருந்தவரும்' அவரைப் பாடியவரும் யாவர்?
 அ) சோழன் நெடுங்கிள்ளியை, பரணர்
 ஆ) சோழன் நலங்கிள்ளியை, கோவூர்கிழார்
 இ) கணைக்கால் இரும்பொறையை, கபிலர்
 ஈ) கரிகாலனை, உருத்திரங்கண்ணனார்.
48. 'யானைப் புக்க புலம்போ' -இவ்வுவமைக்குப் பொருத்தமான தொடர்?
 அ) தனக்குப் பயன்படும் பிறருக்குப் பயன்படாது
 ஆ) தனக்கும் பயன்படாது பிறருக்கும் பயன்படாது
 இ) பிறருக்குப் பயன்படும் தனக்குப் பயன்படாது
 ஈ) தனக்குப் பயன்படும் பிறருக்கும் பயன்படும்
49. மயிலைநாதர் எழுதிய முதல் நூல் எது?
 அ) கிறித்தவமும் தமிழும் ஆ) வரலாற்று ஆய்வுகள்
 இ) இலக்கிய ஆய்வு ஈ) கலையியல் ஆய்வு
50. மகேந்திரவர்மன் இயற்றிய நூலைக் குறிப்பிடுக.
 அ) குயில் ஆ) பூஜ்ஜியங்களில் சங்கிலி
 இ) மத்தவிலாசம் ஈ) மஞ்சரி

ENGLISH

Choose the appropriate synonyms for the underlined words from the options given.

- We watched for a few moments; then as trade slackened we went over.
 a) reduced b) improved c) loosened d) ended
- During the summer days, under the hot sun, sold fruit, hacked newspapers , ran errands
 a) Jobs b) hobby c) fired d) lazy
- The water should be actually boiling at the moment of impact.
 a) Failure b) loss c) hit d) effort
- I imagined that the destination would be humbled wellings
 a) luxury b) simple c) showy d) expensive
- China tea has virtues which are not to be despised.
 a) goodness b) weakness c) flaw d) popular

Choose the appropriate Antonyms for the underlined words from the options given.

- You must be saving up to emigrate to America
 a) Migrate b) immigrate c) move abroad d) non emigrate
- There are the controversial points in connection to tea drinking
 a) questionable b) doubtfully c) agreeable d) disagree

8. The suffering of the children was particularly **heart breaking**
a) sad **b) distress** c) happy d) stressed
9. Our original **dullness** had quite gone.
a) zest b) idleness c) laziness d) darkness
10. Tamil is of considerable **old** language
a) antiquity b) ancient c) traditional **d) latest**
11. Choose the correct expansion of **GDP**
a) Great Demand for Purchase b) Grass Domestic Purchase
c) **Gross Domestic Product** d) Great Domestic purchase
12. Choose the correct expansion of **TNPSC**
a) Tamilnadu Public Service Commission
b) Tamilnadu National People Service Commission
c) Tamilnadu Pupil service Commission
d) Tamilnadu Pupil science commission
13. Choose the correct expansion of **IAS**
a) Indian Airforce service **b) Indian Administrative service**
c) Indian Agriculture service d) Indian Army Service
14. Choose the word with the correct spelling
a) governmant **b) government** c) govarmant d) goverment
15. Choose the word with the correct spelling
a) vocabullary b) vocablery **c) vocabulary** d) voceblory
16. Choose the correct BritishEnglish equivalent for the American English word "**vacation**"
a) weekend **b) holiday** c) tour d) leave
17. Which of the following sentences is of the pattern SVOC
a) The went to the market b) I finished the work
c) My mother is teaching French **d) The news made his name popular.**

Fill in the blanks with modal auxiliaries

18. I wish you _____ tell me the truth (**Would**)
19. I tried to climb up the tree but _____ not. (**could**)
20. The candidates _____ answer five out of ten questions. (**could/must**)

Form two derivatives by adding prefixes and suffixes.

21. a) manage - **managemnet** b) obey - **disobey**
c) decent - **indecent** d) spoon - **Spoonful**

Fill in the blank with the most suitable prepositional phrase.

22. _____ Rain, takes an Umbrella.
a) In favour of **b) In case of** c) On behalf of d) log
23. What is the blended word of **web + log** .
a) Lady blog **b) blog** c) vlog d) log
24. What is the blended word of **breakfast +lunch**
a) brunch b) munch c) nibble d) food

Fill in the blanks with suitable articles or determiners

25. I am _____ eldest in my family(**the**)
 26. There are only _____ chocolates left for you (**few**)
 27. Mother is _____ honest woman. (**an**)
 28. Can you get me _____ butter? (**the / some**)
 29. Monisha has _____ films in her hands. (**many**)

Fill in with suitable homophones

30. Plain- **plane**
 31. Wait - **weight**
 32. Grown- **groan**

Fill in the blanks with suitable preposition.

33. These two guys are selected _____ the national games (**by**)
 34. The teacher is explaining _____ some health disease (**about**)
 35. We have to leave this place _____ they reach here.(**before**)
 36. She is dancing _____ him, a dance partner (**with**)
 37. The movie starts at 3 _____ the afternoon (**in**)

Fill in the blanks with suitable conjunctions

38. I am very tired _____ I have been working all day (**because**)
 39. I am not angry _____ anything I feel a little surprised (**if**)
 40. We will get there _____ you do (**as soon as**)

Choose the correct combination of the compound words

41. Sunlight
 a) verb+ noun **b) noun+ noun** c) adverb+ noun
 42. Partly –full
 a) **Adverb + adjective** b) adjective+ noun c) adverb+ noun
 43. Swimming pool
 a) noun+ noun b) noun+ adverb **c) verb +noun**

Choose the correct question tag

44. She has got a lot of books _____?
 a) doesn't she **b) hasn't she** c) does she d) haven't she
 45. Let's watch a film _____?
 a) **shall we** b) don't we c) do we d) don't we

Match the phrasal verb with their meanings

46. Turn away - to stop (**reject**)
 47. Went over - reject (**visit**)
 48. Put out - visit (**to stop**)

Choose the correct meaning for the given idioms

49. Keep at bay
 a) keep at the sea shore b) keep in mind
 c) **keep at a distance** d) keep thinking , about something
 50. at the top of the hat
 a) as soon as it was spoken **b) Done easily , without any preparation**
 c) done in an instant d) after something is done

MATHEMATICS

CHOOSE THE CORRECT ANSWER

- If $|\text{adj}(\text{adj } A)| = |A|^9$, then the order of the square matrix A is _____.
a) 3 **b) 4** c) 2 d) 5
- If $A^T A^{-1}$ is symmetric, then $A^2 =$ _____.
a) A^{-1} **b) $(A^T)^2$** c) A^T d) (A^{-1})
- If $\rho(A) = \rho([A/B])$ then the system of linear equation $AX=B$ is _____.
a) Inconsistent **b) Consistent**
c) Consistent and infinitely many solutions d) None
- If $|Z|=1$, then the value of $\frac{1+Z}{1+Z}$ is _____.
a) z **b) \bar{z}** c) $1/z$ d) 1
- If $|z - \frac{3}{z}|$ then the least value of $|Z|$ is _____.
a) 1 b) 2 c) 3 d) 5
- The product of all four values of $(\cos \frac{\pi}{3} + i \sin \frac{\pi}{3})^{\frac{3}{4}}$ is _____.
a) -2 b) -1 **c) 1** d) 2
- A polynomial equation in X of degree n always has _____.
a) n distinct roots b) n real roots **c) n imaginary roots** d) at most one root
- The polynomial $x^3 - kx^2 + 9$ has three real zeros if and only if k satisfies
a) $|k| \leq 6$ b) $|k| = 0$ c) $|k| > 6$ **d) $|k| \geq 6$**
- The domain of the function defined by $f(x) = \sin^{-1} \sqrt{x-1}$ is _____.
a) [1,2] b) [-1,1] c) [0,1] d) [-1,0]
- $\tan^{-1}(\frac{1}{4}) + \tan^{-1}(\frac{2}{9})$ is equal to _____.
a) $\frac{1}{2} \cos^{-1}(\frac{3}{5})$ b) $\frac{1}{2} \sin^{-1}(\frac{3}{5})$ c) $\frac{1}{2} \tan^{-1}(\frac{3}{5})$ **d) $\tan^{-1}(\frac{1}{2})$**
- If $\sin^{-1} x + \cot^{-1} \frac{1}{2} = \frac{\pi}{2}$, then x is equal to _____.
a) $\frac{1}{2}$ **b) $\frac{1}{\sqrt{5}}$** c) $\frac{2}{\sqrt{5}}$ d) $\frac{\sqrt{3}}{2}$
- If P(x,y) be any point on $16X^2 + 25Y^2 = 400$ with F1 (3,0) and F2 (-3,0), then $PF_1 + PF_2$ is _____.
a) 8 b) 6 **c) 10** d) 12
- The area of the quadrilateral formed with the foci of the hyperbolas $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$ and $\frac{x^2}{a^2} - \frac{y^2}{b^2} = -1$ is _____.
a) $4(a^2 + b^2)$ **b) $2(a^2 + b^2)$** c) $(a^2 + b^2)$ d) $\frac{1}{2}(a^2 + b^2)$
- The area of the largest rectangle inscribed in an ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ is _____.
a) 2ab b) ab c) \sqrt{ab} d) $\frac{a}{b}$

15. If \vec{a} and \vec{b} are parallel vectors, then $[\vec{a}, \vec{c}, \vec{b}]$ is equal to _____.
 a) 2 b) -1 c) 1 **d) 0**
16. If $\vec{a} \cdot \vec{b} = \vec{b} \cdot \vec{c} = \vec{c} \cdot \vec{b} = 0$, then the value of $|\vec{a}, \vec{b}, \vec{c}|$ is _____.
a) $|\vec{a}| |\vec{b}| |\vec{c}|$ b) $\frac{1}{3} |\vec{a}| |\vec{b}| |\vec{c}|$ c) 1 d) -1
17. If $\vec{a} \times (\vec{b} \times \vec{c}) = (\vec{a} \times \vec{b}) \times \vec{c}$ where $\vec{a}, \vec{b}, \vec{c}$ are any three vectors such that $\vec{a} \cdot \vec{b} \neq 0$ and $\vec{b} \cdot \vec{c} \neq 0$, then \vec{a} and \vec{c} are _____.
 a) Perpendicular **b) Parallel**
 c) Inclined at an angle $\pi/3$ d) Inclined at angle $\pi/6$
18. If $\vec{a} = 2\vec{i} + 3\vec{j} - \vec{k}$; $\vec{b} = \vec{i} + 2\vec{j} - 5\vec{k}$; $\vec{c} = 3\vec{i} + 5\vec{j} - \vec{k}$, then a vector perpendicular to \vec{a} and lies in the plane containing \vec{b} and \vec{c} is _____.
 a) $-17\vec{i} + 21\vec{j} - 97\vec{k}$ b) $-17\vec{i} + 21\vec{j} - 123\vec{k}$
 c) $-17\vec{i} - 21\vec{j} + 97\vec{k}$ **d) $-17\vec{i} - 21\vec{j} - 97\vec{k}$**
19. The tangent to the curve $y^2 - xy + 9 = 0$ is vertical when _____.
 a) $y=0$ **b) $y = \pm\sqrt{3}$** c) $y = \frac{1}{2}$ d) $y = \pm 3$
20. One of the closest points on the curve $x^2 - y^2 = 4$ to the point (6, 0) is _____.
 a) (2, 0) b) ($\sqrt{5}$, 1) **c) (3, $\sqrt{5}$)** d) ($\sqrt{13}$, $-\sqrt{3}$)
21. The number given by the mean theorem for the function $\frac{1}{x}$, $X \in [1, 9]$ is _____.
 a) 2 b) 2.5 **c) 3** d) 3.5
22. The maximum product of two positive numbers, when their sum of the square is 200, is _____.
 a) 100 b) $25\sqrt{7}$ c) 28 d) $24\sqrt{14}$
23. If $U(x, y) = e^{x^2 + y^2}$, then $\frac{\partial u}{\partial x}$ is equal to _____.
 a) $e^{x^2 + y^2}$ **b) $2xu$** c) x^2u d) y^2u
24. If $W(x, y) = x^y$, $x > 0$, then $\frac{\partial w}{\partial x}$ is equal to _____.
 a) $x^y \log x$ b) $y \log x$ **c) yx^{y-1}** d) $x \log y$
25. If $f(x, y, z) = xy + yz + zx$, then $f_x - f_z$ is equal to _____.
a) $z - x$ b) $y - z$ c) $x - z$ d) $y - x$
26. The area between $y^2 = 4x$ and its latus rectum is _____.
 a) $\frac{2}{3}$ b) $\frac{4}{3}$ **c) $\frac{8}{3}$** d) $\frac{5}{3}$
27. If $\frac{\Gamma(n+2)}{\Gamma(n)} = 90$ then 'n' is _____.
 a) 10 b) 5 c) 8 **d) 9**
28. The value of $\int_0^a (\sqrt{a^2 - x^2})^3 dx$ is _____.
 a) $A \frac{\pi a^2}{16}$ b) $\frac{3\pi a^4}{16}$ c) $\frac{3\pi a^2}{8}$ **d) $\frac{3\pi a^4}{8}$**

43. The value of $\hat{i} \cdot (\hat{j} * \hat{k}) + (\hat{i} * \hat{k}) \cdot \hat{j}$ _____.
- a) 1 b) -1 c) 0 d) j
44. If $u = x^y$, then it is equal to _____.
- a) yx^{y-1} b) $u \log x$ c) $u \log y$ d) xy^{x-1}
45. The area of the region bounded by the graph of $y = \sin x$ and $y = \cos x$ between $X = 0$ and $X = \frac{\pi}{4}$ is _____.
- a) $\sqrt{2}$ b) $\sqrt{2}-1$ c) $2\sqrt{2}-2$ d) $2\sqrt{2}+2$
46. If $u = \frac{1}{\sqrt{x^2+y^2}}$, then $x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y}$ is equal to _____.
- a) $\frac{1}{2}u$ b) u c) $\frac{3}{2}u$ d) $-u$
47. $Z_1 = 4+5i, Z_2 = -3+2i$, then $\frac{Z_1}{Z_2}$ is _____.
- a) $\frac{2}{3} - \frac{22}{13} i$ b) $\frac{-2}{13} + \frac{22}{13} i$ c) $\frac{-2}{13} - \frac{22}{13} i$ d) $\frac{2}{13} + \frac{22}{13} i$
48. The degree of the differential equation $\sqrt{1 + \left(\frac{dy}{dx}\right)^2} = \frac{d^2y}{dx^2}$ _____.
- a) 1 b) 2 c) 3 d) 6
49. The conditional statement $p \rightarrow q$ is equivalent to _____.
- a) $p \vee q$ b) $p \vee \sim q$ c) $\sim p \vee q$ d) $p \wedge q$
50. If $a * b = \sqrt{a^2 + b^2}$ on the real numbers, then $*$ is _____.
- a) Commutative but not associative b) Associative but not commutative
 c) Both commutative and associative d) Neither commutative nor associative.

PHYSICS

Choose the best answer:

- Which charge configuration produces a uniform electric field?
 (a) point charge (b) uniformly charged infinite line
(c) uniformly charged infinite plane (d) uniformly charged spherical shell
- Torque experienced by a dipole in a uniform electric field $\tau = ?$
 a) $p \times B$ **b) $p \times E$** c) $p \times F$ d) $p \times V$
- Capacitance of a conductor is given by $C = \frac{Q}{V}$ _____.
 a) Q^2 / V b) E / V **c) Q / V** d) none of these
- A carbon resistor of $(47 \pm 4.7) \text{ k}\Omega$ to be marked with rings of different colors for its identification. The color code sequence will be _____.
 a) Yellow – Green – Violet – Gold
b) Yellow – Violet – Orange – Silver
 c) Violet – Yellow – Orange – Silver
 d) Green – Orange – Violet - Gold
- Joule's law of heating is $H = \frac{V^2}{R} t$ _____.
a) $V I t$ b) $V^2 I t$ c) $V I$ d) $V^2 I^2 t$

6. Practical form of Ohm's law states that $V = \underline{\hspace{2cm}}$.
a) $I^2 R^2$ b) $I^2 R$ c) I/R **d) IR**
7. In Joule's heating law, when R and t are constant, if the H is taken along the y axis and I² along the x axis, the graph is .
a) straight line b) parabola c) circle d) ellipse
8. The vertical component of Earth's magnetic field at a place is equal to the horizontal component. What is the value of angle of dip at this place?
(a) 30° **(b) 45°** (c) 60° (d) 90°
9. An ammeter is an instrument used to measure in an electrical circuit.
a) current b) voltage c) resistance d) charge
10. When the current changes from +2A to -2A in 0.05 s, an emf of 8 V is induced in a coil. The coefficient of self-induction of the coil is .
(a) 0.2 H (b) 0.4 H (c) 0.8 H **(d) 0.1 H**
11. When a current carrying loop is placed in a uniform magnetic field, it experiences a .
a) momentum **b) torque** c) both a & b d) none of these
12. $20 / \pi^2$ H inductor is connected to a capacitor of capacitance C. The value of C in order to impart maximum power at 50 Hz is .
(a) 50 μ F (b) 0.5 μ F (c) 500 μ F **(d) 5 μ F**
13. Unit of inductance is .
a) ohm b) tesla **c) henry** d) hertz
14. A transformer is a stationary device used to transform electrical power from one circuit to another without changing its .
a) **frequency** b) amplitude c) both a & b d) none of these
15. An ac generator is an energy conversion device and it converts mechanical energy into energy.
a) potential b) thermal **c) electrical** d) none of these
16. A step-down transformer reduces the supply voltage from 220 V to 11 V and increases the current from 6 A to 100 A. Then its efficiency is .
(a) 1.2 **(b) 0.83** (c) 0.12 (d) 0.9
17. Which one of them is used to produce a propagating electromagnetic wave?
a) an accelerating charge b) a charge moving with constant velocity
c) a stationary charge d) an uncharged particle
18. Electromagnetic waves move equal to the speed of in vacuum.
a) air **b) light** c) both a & b d) none of these
19. The frequency range of X-rays is from .
a) 10^{10} Hz to 10^{19} Hz b) 10^{10} Hz to 10^{18} Hz
c) 10^{17} Hz to 10^{19} Hz d) 10^{17} Hz to 10^{20} Hz
20. Which of the following is false for electromagnetic waves?
a) transverse b) non-mechanical waves
c) longitudinal d) produced by accelerating charges
21. Which of the following is an electromagnetic wave?
a) α - rays b) β - rays **c) γ - rays** d) all of them

22. Fraunhofer lines are an example of _____ spectrum.
a) line emission **b) line absorption** c) band emission d) band absorption
23. Two equal and opposite charges separated by a small distance constitute an _____.
a) electric quadrupole **b) electric dipole**
c) electric monopole d) none of these
24. _____ is defined as the total dipole moment per unit volume of the dielectric.
a) Ionization b) Magnetization
c) Polarization d) Electrification
25. _____ is a device used to store electric charge and electrical energy.
a) **capacitor** b) Resistor c) Inductor d) Battery
26. A parallel plate capacitor stores a charge Q at a voltage V. Suppose the area of the parallel plate capacitor and the distance between the plates are each doubled then which is the quantity that will change?
(a) capacitance (b) charge (c) voltage **(d) energy density**
27. _____ filament kept inside a glass bulb
a) Quartz **b) Tungsten** c) both a & b d) none of these
28. Conversion of temperature differences into electrical voltage and vice versa is known as _____.
a) thermoelectric effect b) seebeck effect
c) thomson effect d) peltier effect
29. The speed of light in air was determined as, $V =$ _____.
a) $2.99792 \times 10^8 \text{ m s}^{-2}$ **b) $2.99792 \times 10^8 \text{ m s}^{-1}$**
c) $2.99792 \times 10^{10} \text{ m s}^{-1}$ d) $2.99792 \times 10^{-8} \text{ m s}^{-1}$
30. For light incident from air on a slab of refractive index 2, the maximum possible angle of refraction is _____.
a) 30° b) 45° c) 60° d) 90°
31. Stars twinkle due to _____.
a) Reflection b) Total internal reflection
c) Refraction d) Polarization
32. Planck's constant (h) = _____.
a) $6.625 \times 10^{-34} \text{ J s}$ b) $6.625 \times 10^{-33} \text{ J s}$
c) $6.625 \times 10^{-34} \text{ J s}^{-1}$ d) $6.625 \times 10^{-34} \text{ J}^{-1} \text{ s}^{-1}$
33. The first diffraction minimum due to a single slit of width $1.0 \times 10^{-5} \text{ cm}$ is at 30° . Then the wavelength of light used is _____.
a) 400 \AA **b) 500 \AA** c) 600 \AA d) 700 \AA
34. Light transmitted by the Nicol prism is _____.
a) partially polarized b) unpolarised
c) plane polarized d) elliptically polarized
35. The SI unit of energy is _____.
a) joule b) degree c) kelvin d) celsius
36. The threshold wavelength for a metal surface whose photoelectric work function is 3.313 eV is _____.
a) 4125 \AA **b) 3750 \AA** c) 6000 \AA d) 2555 \AA

37. Emission of electrons by the absorption of heat energy is called _____ emission.
a) photoelectric b) field
c) thermionic d) secondary
38. The ratio of the wavelengths of radiation emitted for the transition from $n = 2$ to $n = 1$ in Li^{++} , He^+ and H is _____.
a) 1: 2: 3 b) 1: 4: 9 c) 3:2:1 **d) 4: 9: 36**
39. The atomic number of H-like atoms with ionization potential 122.4 V for $n = 1$ is _____.
a) 1 b) 2 **c) 3** (d) 4
40. The charge of cathode rays particle is _____.
a) positive **b) negative** c) neutral d) not defined
41. The zener diode is primarily used as _____.
a) rectifier b) amplifier c) oscillator **d) voltage regulator**
42. If the input to the NOT gate is $A = 1011$, its output is _____.
a) 0100 b) 1000 c) 1100 d) 0011
43. The barrier potential of a silicon diode is approximately _____.
a) 0.7 V b) 0.3V c) 2.0 V d) 2.2V
44. The materials used in Robotics are _____.
a) Aluminium and silver b) Silver and gold
c) Copper and gold **d) Steel and aluminum**
45. The gravitational waves were theoretically proposed by _____.
a) Conrad Rontgen b) Marie Curie **c) Albert Einstein** d) Edward Purcell
46. The particle size of ZnO material is 30 nm. Based on the dimension it is classified as _____.
a) bulk material **b) nanomaterial**
c) soft material d) magnetic material
47. The electrical equivalent of the original information is called the ___ signal.
a) baseband b) FM c) AM d) none of these
48. The transverse nature of light is shown in _____.
(a) interference (b) diffraction (c) scattering **(d) polarisation**
49. _____ are the atoms of different elements having the same number of neutrons.
a) Isotones b) Isobars c) Isotopes d) Isomers
50. The value of de Broglie's wavelength is _____.
a) 1.337 Å **b) 1.227 Å** c) 1.277 Å d) 1.772 Å

CHEMISTRY

1. Bauxite has the composition
a) Al_2O_3 **b) $\text{Al}_2\text{O}_3 \cdot n\text{H}_2\text{O}$** c) $\text{Fe}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$ d) None of these
2. Which one of the following ores is best concentrated by froth – floatation method?
a) Magnetite b) Hematite **c) Galena** d) Cassiterite
3. Extraction of gold and silver involves leaching with cyanide ion. Silver is later recovered by
a) Distillation b) Zone refining
c) Displacement with zinc d) liquation

4. Considering Ellingham diagram, which of the following metals can be used to reduce alumina?
 a) Fe b) Cu c) **Mg** d) Zn
5. Boric acid is an acid because its molecule
 a) contains replaceable H^+ ion
 b) gives up a proton
 c) combines with proton to form water molecule
 d) **accepts OH^- from water, releasing proton.**
6. The basic structural unit of silicates is
 a) $(SiO_3)^{2-}$ b) $(SiO_4)^{2-}$ c) $(SiO)^-$ d) **$(SiO_4)^{4-}$**
7. Which of the following is not sp^2 hybridised?
 a) Graphite b) graphene c) Fullerene d) **dry ice**
8. The stability of +1 oxidation state increases in the sequence
 a) **Al < Ga < In < Tl** b) Tl < In < Ga < Al
 c) In < Tl < Ga < Al d) Ga < In < Al < Tl
9. Which is true regarding nitrogen?
 a) least electronegative element b) has low ionisation enthalpy than oxygen
 c) d- orbitals available d) **ability to form $p\pi-p\pi$ bonds with itself**
10. Among the following, which is the strongest oxidizing agent?
 a) Cl_2 b) **F_2** c) Br_2 d) I_2
11. Which one of the following orders is correct for the bond dissociation enthalpy of halogen molecules?
 a) $Br_2 > I_2 > F_2 > Cl_2$ b) $F_2 > Cl_2 > Br_2 > I_2$
 c) $I_2 > Br_2 > Cl_2 > F_2$ d) **$Cl_2 > Br_2 > F_2 > I_2$**
12. Among the following the correct order of acidity is
 a) $HClO_2 < HClO < HClO_3 < HClO_4$ b) $HClO_4 < HClO_2 < HClO < HClO_3$
 c) $HClO_3 < HClO_4 < HClO_2 < HClO$ d) **$HClO < HClO_2 < HClO_3 < HClO_4$**
13. In acid medium, potassium permanganate oxidizes oxalic acid to
 a) oxalate b) **Carbon dioxide** c) acetate d) acetic acid
14. The most common oxidation state of actinoids is
 a) +2 b) **+3** c) +4 d) +6
15. Which one of the following is not correct?
 a) **$La(OH)_3$ is less basic than $Lu(OH)_3$**
 b) In lanthanoid series ionic radius of Ln^{3+} ions decreases
 c) La is actually an element of transition metal series rather than lanthanoid series
 d) Atomic radii of Zr and Hf are same because of lanthanoid contraction
16. A magnetic moment of 1.73 BM will be shown by one among the following
 a) $TiCl_4$ b) $[CoCl_6]^{4-}$ c) **$[Cu(NH_3)_4]^{2+}$** d) $[Ni(CN)_4]^{2-}$
17. Crystal field stabilization energy for high spin d^5 octahedral complex is
 a) $-0.6 \Delta_0$ b) **0** c) $2(P-\Delta_0)$ d) $2(P+\Delta_0)$
18. Formula of tris(ethane-1,2-diamine)iron(II)phosphate
 a) $[Fe(CH_3-CH(NH_2)_2)_3](PO_4)_3$ b) $[Fe(H_2N-CH_2-CH_2-NH_2)_3](PO_4)$
 c) $[Fe(H_2N-CH_2-CH_2-NH_2)_3](PO_4)_2$ d) **$[Fe(H_2N-CH_2-CH_2-NH_2)_3](PO_4)_2$**

19. Fac-mer isomerism is shown by
 a) $[\text{Co}(\text{en})_3]^{3+}$ b) $[\text{Co}(\text{NH}_3)_4(\text{Cl})_2]^+$
 c) $[\text{Co}(\text{NH}_3)_3(\text{Cl})_3]$ d) $[\text{Co}(\text{NH}_3)_5\text{Cl}]\text{SO}_4$
20. In calcium fluoride, having the fluorite structure the coordination number of Ca^{2+} ion and F^- ion are
 a) 4 and 2 b) 6 and 6 c) **8 and 4** d) 4 and 8
21. The ratio of close packed atoms to tetrahedral hole in cubic packing is
 a) 1:1 b) 1:2 c) **2:1** d) 1:4
22. The vacant space in bcc lattice unit cell is
 a) 48% b) 23% c) **32%** d) 26%
23. The fraction of total volume occupied by the atoms in a simple cubic is
 a) $[\pi/(4\sqrt{2})]$ b) **$[\pi/6]$** c) $[\pi/4]$ d) $[\pi/(3\sqrt{2})]$
24. The decomposition of phosphine (PH_3) on tungsten at low pressure is a first order reaction. It is because the
 a) rate is proportional to the surface coverage
 b) rate is inversely proportional to the surface coverage
 c) **rate is independent of the surface coverage**
 d) rate of decomposition is slow
25. The addition of a catalyst during a chemical reaction alters which of the following quantities?
 a) Enthalpy b) **Activation energy** c) Entropy d) Internal energy
26. For a first order reaction, the rate constant is 6.909 min^{-1} . The time taken for 75% conversion in minutes is
 a) $[3/2]\log 2$ b) **$[2/3]\log 2$** c) $[3/2]\log[3/4]$ d) $[2/3]\log[4/3]$
27. The rate constant of a reaction is $5.8 \times 10^{-2} \text{ s}^{-1}$. The order of the reaction is
 a) **First order** b) zero order c) Second order d) Third order
28. Conjugate base for Bronsted acids H_2O and HF are
 a) OH^- and H_2FH^+ , respectively b) H_2O and F^- , respectively
 c) **OH^- and F^- , respectively** d) H_3O^+ and H_2F , respectively
29. Which of the following fluoro compounds is most likely to behave as a Lewis base?
 a) BF_3 b) **PF_3** c) CF_4 d) SiF_4
30. Which of these is not likely to act as Lewis base?
 a) **BF_3** b) PF_3 c) CO d) F^-
31. The number of electrons delivered at the cathode during electrolysis by a current of 1A in 60 seconds is (charge of electron = $1.6 \times 10^{-19} \text{ C}$)
 a) 6.22×10^{23} b) 6.022×10^{20} c) **3.75×10^{20}** d) 7.48×10^{23}
32. For the cell reaction $2\text{Fe}^{3+}(\text{aq}) + 2\text{I}^-(\text{aq}) \rightarrow 2\text{Fe}^{2+}(\text{aq}) + \text{I}_2(\text{aq})$ $E^\circ_{\text{cell}} = 0.24\text{V}$ at 298K. The standard Gibbs energy ($\Delta_r G^\circ$) of the cell reactions is :
 a) **$-46.32 \text{ KJ mol}^{-1}$** b) $-23.16 \text{ KJ mol}^{-1}$
 c) $46.32 \text{ KJ mol}^{-1}$ d) $23.16 \text{ KJ mol}^{-1}$
33. Zinc can be coated on iron to produce galvanized iron but the reverse is not possible. It is because
 a) Zinc is lighter than iron
 b) Zinc has lower melting point than iron

- c) Hydrolysis of phenylcyanide with acidic solution
d) reduction of nitrobenzene by Sn/HCl.
45. Ammonium salt of benzoic acid is heated strongly with P_2O_5 and the product so formed is reduced and then treated with $NaNO_2/HCl$ at low temperature. The final compound formed is
a) Benzene diazonium chloride **b) Benzyl alcohol**
c) Phenol d) Nitrosobenzene
46. Which one given below is a non-reducing sugar?
a) Glucose **b) Sucrose** c) maltose d) Lactose.
47. Among the following the achiral amino acid is
a) 2-ethylalanine b) 2-methylglycine
c) 2-hydroxymethylserine d) Tryptophan
48. The number of sp^2 and sp^3 hybridised carbon in fructose are respectively
a) 1 and 4 b) 4 and 2 c) 5 and 1 **d) 1 and 5**
49. Terylene is an example of
a) polyamide b) polythene **c) polyester** d) polysaccharide
50. A mixture of chloroxylenol and terpineol acts as
a) antiseptic b) antipyretic c) antibiotic d) analgesic

BOTANY

1. An eminent Indian embryologist is _____
(a) S.R. Kashyap **(b) P. Maheswari**
(c) M.S. Swaminathan (d) K.C. Mehta
2. Extra nuclear inheritance is a consequence of presence of genes in _____
(a) Mitochondria and chloroplasts
(b) Endoplasmic reticulum and mitochondria
(c) Ribosomes and chloroplast
(d) Lysosomes and ribosomes
3. An allohexaploidy contains _____
(a) Six different genomes **(b) Six copies of three different genomes**
(c) Two copies of three different genomes (d) Six copies of one genome
4. Plasmids are _____
(a) circular protein molecules (b) required by bacteria
(c) tiny bacteria **(d) confer resistance to antibiotics**
5. Restriction enzymes are _____
(a) Not always required in genetic engineering
(b) Essential tools in genetic engineering
(c) Nucleases that cleave DNA at specific sites
(d) both b and c
6. One greenhouse gas contributes 14% of total global warming and another contributes 6%. These are respectively identified as _____
(a) N_2O and CO_2 **(b) CFCs and N_2O**
(c) CH_4 and CO_2 (d) CH_4 and CFCS

7. The quickest method of plant breeding is _____
(a) Introduction (b) Selection
(c) Hybridization (d) **Mutation breeding**
8. Plants having similar genotypes produced by plant breeding are called _____
(a) **clone** (b) haploid (c) autopolyploid (d) genome
9. Test cross involves _____
(a) Crossing between two genotypes with recessive trait
(b) Crossing between two F_1 hybrids
(c) **Crossing the F_1 hybrid with a double recessive genotype**
(d) Crossing between two genotypes with dominant trait
10. The genotype of a plant showing the dominant phenotype can be determined by _____
(a) Back cross (b) **Test cross** (c) Dihybrid cross (d) Pedigree analysis
11. Incomplete linkage was reported by Hutchinson in _____
(a) Drosophila (b) **Maize** (c) Neurospora (d) Lathyrus odoratus
12. During cross over, chiasma occurs between _____
(a) Sister chromatids of non-homologous chromosomes
(b) Non-sister chromatids of non-homologous chromosomes
(c) **Non-sister chromatids of homologous chromosomes**
(d) Sister chromatids of homologous chromosomes
13. At which stage of meiosis, does the chromosome undergo recombination process?
(a) Leptotene stage of prophase I
(b) Zygotene stage of prophase I
(c) Diplotene stage of prophase I
(d) **Pachytene stage of prophase I**
14. Mutation theory was proposed by _____
(a) T. H. Morgan (b) **Hugo de Vries**
(c) Alfred variety (d) Erectiferum
15. Totipotency refers to _____
(a) capacity to generate genetically identical plants
(b) **capacity to generate a whole plant from any plant cell / explant**
(c) capacity to generate hybrid protoplasts
(d) recovery of healthy plants from diseased plants
16. Micro propagation involves _____
(a) vegetative multiplication of plants by using micro-organisms
(b) **vegetative multiplication of plants by using small explants**
(c) vegetative multiplication of plants by using microspores
(d) Non-vegetative multiplication of plants by using microspores and megaspores
17. Virus free plants are developed from _____
(a) Organ culture (b) **Meristem culture**
(c) Protoplast culture (d) Cell suspension
18. The prevention of large scale loss of biological integrity _____
(a) Biopatent (b) Bioethics (c) **Biosafety** (d) Biofuel

19. Solidifying agent used in plant tissue culture is _____
(a) Nicotinic acid (b) Cobaltous chloride
(c) EDTA (d) **Agar**
20. Cryopreservation means it is a process to preserve plant cells, tissues or organs _____
(a) at very low temperature by using ether
(b) at very high temperature by using liquid nitrogen
(c) **at very low temperature of-196 by using liquid nitrogen**
(d) at very low temperature by using liquid nitrogen
21. Identify the group of scientists who developed the intergenic hybrid – the pomato.
(a) Yamada et al. (b) Horsh et al. (c) Takebe et al. (d) **Melchers et al.**
22. Which one of the following condition favours callus induction?
(a) Temperature of $25^{\circ}\text{C} \pm 5^{\circ}\text{C}$ with 12 hours of photoperiod
(b) Temperature of $25^{\circ}\text{C} \pm 2^{\circ}\text{C}$ with 18 hours of photoperiod
(c) Temperature of $25^{\circ}\text{C} + 5^{\circ}\text{C}$ with 14 hours of photoperiod
(d) **Temperature of $25^{\circ}\text{C} \pm 2^{\circ}\text{C}$ with 16 hours of photoperiod**
23. Protoplast are the cells devoid of _____
(a) **Cell wall** (b) Cell membrane
(c) Plasma membrane (d) both A and B
24. Which of the given plant produces cardiac glycosides?
(a) **Calotropis** (b) Acacia (c) Nepenthes (d) Utricularia
25. A free living nitrogen fixing cyanobacterium which can also form symbiotic association with the water fern Azolla
(a) Nostoc (b) **Anabaena** (c) Chlorella (d) Rhizobium
26. Pedogenesis refers to _____
(a) Fossils (b) Water (c) Population (d) **Soil**
27. Mycorrhiza promotes plant growth by _____
(a) Serving as a plant growth regulators
(b) Absorbing inorganic ions from soil
(c) Helping the plant in utilizing atmospheric nitrogen
(d) **Protecting the plant from infection**
28. First cell of male gametophyte in angiosperm is _____
(a) **Microspore** (b) Megaspore (c) Nucleus (d) Primary Endosperm Nucleus
29. Which Mendelian idea is represented by a cross in which the F_1 generation resembles both the parents _____
(a) Incomplete dominance (b) Law of dominance
(c) Inheritance of one gene (d) **Co-dominance**
30. Which of the following one is used as Biosensors?
(a) Electrophoresis (b) **Bioreactors**
(c) Vectors (d) Electroporation
31. Green fluorescent protein (GFP) was isolated from
(a) **Aequorea victoria** (b) Arabidopsis thaliana
(c) Agrobacterium tumifaciens (d) Escherichia coli

32. Synseeds are developed by encapsulating embryoids with _____
(a) Sodium chloride (b) Potassium iodide
(c) Sodium alginate (d) Potassium dichromate
33. Dimethyl sulphoxide is a _____
(a) Solidifying agent **(b) Cryoprotectant**
(c) Fusogenic agent (d) Stimulant
34. The term used to define the ability of a cell to generate entire individual is
(a) Pleuripotent **(b) Totipotent** (c) Multipotent (d) Unipotent
35. Deforestation means _____
(a) growing plants and trees in an area where there is no forest
(b) growing plants and trees in an area where the forest is removed
(c) growing plants and trees in a pond
(d) removal of plants and trees
36. Who is celebrated as Forest Man of India?
(a) Anand Mohan Chakrabarthi (b) Dr. M.S Swaminathan
(c) JadavMolaiPayeng (d) Choudary Ram Dhan
37. The ozone layer of _____ is called bad ozone.
(a) Stratosphere (b) Mesosphere
(c) Troposphere (d) Exosphere
38. Azolla is best suited biofertilizer for _____
(a) Sugar cane cultivation **(b) Paddy cultivation**
(c) Wheat cultivation (d) Cotton cultivation
39. The term green revolution was coined by _____
(a) William S Gaud (b) M.S. Swaminathan
(c) Dr. B.P. Pal (d) Dr. N.E. Borlaug
40. Who is popularly called as the "father of green revolution in India"?
(a) NelJeyaraman **(b) Dr. M.S. Swaminathan**
(c) Dr.Nammalvar (d) N.G.P. Rao
41. Depletion of which gas in the atmosphere can lead to an increased incidence of skin cancer?
a) Ammonia b) Methane c) Nitrous oxide **d) Ozone**
42. The unit for measuring ozone thickness _____
a) Joule b) Kilos **c) Dobson** d) Watt
43. _____ is the total amount of greenhouse gases produced by human activated.
a) Carbon foot print b) Human foot print
c) CO₂ d) None of these
44. The thickness of the ozone column of air is measured by _____
a) Chlorofluorocarbon b) Oxygen c) Flurocarbon d) CO
45. INSAT3DR Satellites used in _____
a) Earth observation b) Communication
c) Disaster management d) Weather forecasting
46. Tamarindusindica is indigenous to _____
a) Tropical African region b) South India, Sri Lanka
c) South America, Greece d) India alone

47. New world species of cotton _____
a) *Gossipium arboretum* b) *G. herbaceum*
c) Both a and b d) ***G. barbadense***
48. The only cereal that has originated and domesticated from the new world _____
a) *Oryzasativa* b) *Triticumasetum*
c) *Triticumduram* d) ***Zea mays***
49. The very common rubber yielding plant of Tamilnadu is _____
a) *Manihotesculenta* b) *Ficuselastica*
c) *Heveabenthamiana* d) ***Heveabrasiliensis***
50. India is the largest producer of _____
a) Chilly b) Tamarind c) **Turmeric** d) Pepper

ZOOLOGY

1. In which type of parthenogenesis are only males produced?
a) Arrhenotoky b) Thelytoky c) Amphitoky d) Both a and b
2. The mode of sexual reproduction in bacteria is by
a) Formation of gametes b) Endospore formation
c) Conjugation d) Zoospore formation
3. In which mode of reproduction variations are seen
a) Asexual b) Parthenogenesis c) **Sexual** d) Both a and b
4. Which among the following animals exhibit ovoviviparity?
a) frog b) **shark** c) sheep d) hen
5. The mature sperms are stored in the
a) Seminiferous tubules b) Vas deferens
c) Epididymis d) Seminal vesicle.
6. The site of embryo implantation is the
a) Uterus b) Peritoneal cavity
c) Vagina d) Fallopian tube
7. Mammalian egg is
a) Mesolecithal and non cleidoic b) Microlecithal and non cleidoic
c) Alecithal and non cleidoic d) Alecithal and cleidoic
8. The Androgen Binding Protein (ABP) is produced by
a) Leydig cells b) Hypothalamus c) **Sertoli cells** d) Pituitary gland
9. Select the incorrect action of hormonal contraceptive pills from the following
a) Inhibition of spermatogenesis
b) Inhibition of ovulation
c) Changes in cervical mucus impairing its ability to allow passage and transport of sperms.
d) Alteration in uterine endometrium to make it unsuitable for implantation
10. ABO blood group in man is controlled by
a) Multiple alleles b) Lethal genes
c) Sex linked genes d) Y-linked gene

25. The Athlete's foot disease in human is caused by-----
a) Bacteria **b) Fungi** c) Virus d) Protozoan
26. Which of the following disease is spread through droplet nuclei?
a) Tularemia b) Listeriosis **c) Chicken pox** d) Mumps
27. Paratope is an
a) Antibody binding site on variable regions
b) Antibody binding site on heavy regions
(c) Antigen binding site on variable regions
d) Antigen binding site on heavy regions
28. AIDS virus has
(a) Single stranded RNA (b) Double stranded RNA
(c) Single stranded DNA (d) Double stranded DNA
29. Cell mediated immunity is carried out by..... while humoral immunity is mainly carried out by
(a) B cells/T cells (b) Epitopes/antigens
(c) T cells/B cells (d) antibodies/antigens
30. B Cells are activated by
(a) Complement (b) Antibody (c) Interferon **(d) Antigen**
31. B cells that produce and release large amount of antibody are called
(a) Memory cells (b) Basophils **(c) Plasma cells** (d) killer cells
32. The most common substrate used in distilleries for the production of ethanol is _____
a) Soyameal b) Groundgram **c) Molasses** d) Corn meal.
33. The purpose of biological treatment of wastewater is to _____
a) Reduce BOD b) Increase BOD
c) Reduce sedimentation d) Increase sedimentation
34. CO₂ is not released during
a) Alcoholic fermentation **b) Lactate fermentation**
c) Aerobic respiration in animals d) Aerobic respiration in plants
35. The first clinical gene therapy was done for the treatment of
a) AIDS b) Cancer c) Cystic fibrosis **d) SCID**
36. PCR proceeds in three distinct steps governed by temperature, they are in order of
a) Denaturation, Annealing, Synthesis
b) Synthesis, Annealing, Denaturation
c) Annealing, Synthesis, Denaturation
d) Denaturation, Synthesis, Annealing
37. ELISA is mainly used for
a) Detection of mutations **b) Detection of pathogens**
c) Selecting animals having desired traits d) Selecting plants having desired traits
38. GEAC stands for
a) Genome Engineering Action Committee
b) Ground Environment Action Committee
c) Genetic Engineering Approval Committee
d) Genetic and Environment Approval

39. Dolly, the sheep was obtained by a technique known as
a) Cloning by gene transfer
b) Cloning without the help of gametes
c) Cloning by tissue culture of somatic cells
d) Cloning by nuclear transfer
40. Organisms which can survive a wide range of temperature are called
a) Ectotherms **b) Eurytherms** c) Endotherms d) Stenotherms
41. Which of the following is an r-species
a) Human **b) Insects** c) Rhinoceros d) Whale
42. Animals that can move from fresh water to sea called as.....
a) Stenothermal b) Eurythermal
c) Catadromous d) Anadromous
43. Which one of the following is not coming under in situ conservation?
a) Sanctuaries b) Natural parks
c) Zoological park d) Biosphere reserve
44. The organization which published the red list of species is
a) WWF **b) IUCN** c) ZSI d) UNEP
45. Who introduced the term biodiversity?
a) Edward Wilson **b) Walter Rosen**
c) Norman Myers d) Alice Norman
46. Which of the following forests is known as the lungs of the planet earth?
a) Tundra forest b) Rain forest of north east India
c) Taiga forest **d) Amazon rain forest**
47. Right to Clean Water is a fundamental right, under the Indian Constitution
a) Article 21 b) Article 12 c) Article 31 d) Article 41
48. The 'thickness' of Stratospheric Ozone layer is measured in/on:
a) Sieverts units **b) Dobson units**
c) Melson units d) Beaufort Scale
49. Excess of fluoride in drinking water causes:
a) Lung disease b) Intestinal infection
c) Fluorosis d) None of the above
50. As per 2017 statistics, the highest per capita emitter of Carbon dioxide in the world is
a) USA **b) China** c) Qatar d) Saudi Arabia

BIOLOGY BIO-ZOOLOGY

1. A few statements describing certain features of reproduction are given below. Select the options that are true for both sexual and asexual reproduction from the options given:
- Gametic fusion takes place
 - Transfer of genetic material takes place
 - Reduction division takes place
 - Progeny have some resemblance with parents
- a) i & ii b) ii & iii **c) ii & iv** d) i & ii

2. Which of the following statements support the view that elaborate sexual reproductive process develops much later in the organic evolution?
- Lower groups of organisms have simpler body design
 - Asexual reproduction is common in lower groups
 - Asexual reproduction is common in higher groups of organisms
 - The high incidence of sexual reproduction is in angiosperms and vertebrates.
- a) i, ii and iii b) i, iii and iv **c) i, ii, and iv** d) ii, iii and iv
3. Several hormones like hCG, hPL, oestrogen and progesterone are produced by
- a) ovary **b) placenta** c) fallopian tube d) pituitary
4. The testes in human are situated outside the abdominal cavity inside a pouch called scrotum. The purpose served is for
- escaping any possible compression by the visceral organs.
 - providing more space for the growth of epididymis.
 - providing a secondary sexual feature for exhibiting the male sex
 - d) maintaining the scrotal temperature lower than internal body temperature**
5. Assisted reproductive technology, IVF involves the transfer of
- Ovum into the fallopian tube **b) Zygote into the fallopian tube**
 - Zygote into the uterus d) Embryo with 16 blastomeres into the fallopian tube
6. ABO blood groups in humans are controlled by the gene I. It has three alleles – IA, IB and i. Since there are three different alleles, six different genotypes are possible. How many phenotypes can occur?
- a) Three b) One **c) Four** d) Two
7. A gene showing codominance has:
- Alleles tightly linked on the same chromosome
 - Alleles that are recessive to each other
 - c) Both alleles independently expressed in the heterozygote**
 - One allele dominant on the other
8. The association of histone H1 with a nucleosome indicates
- Transcription is occurring
 - DNA replication is occurring
 - c) The DNA is condensed into chromatin fibre**
 - The DNA double helix is exposed
9. The Okazaki fragments in DNA chain growth
- a) Result in transcription**
 - Polymerise in the 3' to 5' direction and forms replication fork
 - Prove semi-conservative nature of DNA replication
 - Polymerises in the 5' to 3' direction and explain 3' to 5' DNA replication
10. A person suffering from a disease caused by Plasmodium, experiences recurring chill and fever at the time when?
- The sporozoites released from RBC's are being rapidly killed and broken down inside spleen
 - The trophozoites reach maximum growth and give out certain toxins.
 - c) The parasite after its rapid multiplication inside RBC's reuptures them, releasing the stage to enter fresh RBC's**
 - The microgametocytes and megagametocytes are being destroyed by the WBC's

11. Where will you look for the sporozoites of the material parasite?
a) Red blood corpuscles of humans suffering from malaria
b) Spleen of infected humans
c) Salivary glands of freshly moulted female anopheles mosquito
d) Saliva of infected female anopheles mosquito
12. At which stage HIV infection does one usually show symptoms of AIDS?
a) Within 15 days of sexual contact with an infected person
b) When the infected retro virus enters host cells
c) When HIV damages large number of helper T- Lymphocytes
d) When the viral DNA is produced by reverse transcriptase
13. Which of the following is correct regarding AIDS causative agent HIV?
a) HIV is enveloped virus that contains two identical molecules of single-stranded RNA and two molecules of reverse transcriptase
b) HIV is unenveloped retrovirus
c) HIV does not escape but attacks the acquired immune response
d) HIV is enveloped virus containing one molecule of single – stranded RNA and one molecule of reverse transcriptase
14. The active form of Entamoeba histolytica feeds upon:
a) Erythrocytes, mucosa and submucosa of colon
b) Mucosa and submucosa colon only
c) Food in intestine
d) Blood only
15. When domestic sewage mixes with river water
a) Small animals like rat will die after drinking river water
b) The increased microbial activity releases micronutrients such as iron.
c) The increased microbial activity uses up dissolved oxygen
d) The river water is still suitable for drinking as impurities are only about 0.1 per cent
16. Select the correct statement from the following
a) Biogas is produced by the activity of aerobic bacteria on animal waste b) Methanobacterium is an aerobic bacterium found in rumen of cattle
c) Biogas, commonly called gobar gas, is pure methane
d) Activated sludge-sediment in settlement tank of sewage treatment plant is a right source of aerobic bacteria
17. During sewage treatment, biogas are produced which includes
a) Methane, hydrogen sulphide, carbon dioxide
b) Methane, oxygen, hydrogen sulphide
c) Hydrogen sulphide, methane, sulphur dioxide
d) Hydrogen sulphide, nitrogen, methane
18. The colonies of recombinant bacteria appear white in contrast to blue colonies of non-recombinant bacteria because of
a) Non-recombinant bacteria containing β -galactosidase.
b) Insertional inactivation of α -galactosidase in nonrecombinant bacteria.
c) Insertional inactivation of α -galactosidase in recombinant bacteria.
d) Inactivation of glycosidase enzyme in recombinant bacteria

19. Stirred – tank bioreactors have been designed for
- Addition of preservatives of the product
 - Purification of the product
 - Ensuring anaerobic conditions in the culture vessel
 - d) Availability of oxygen throughout the process**
20. For transformation, micro-particles coated with DNA to be bombarded with gene gun are made up of
- Silver or Platinum
 - Platinum or Zinc
 - Silicon or Platinum
 - d) Gold or Tungsten**
21. Which one of the following is most appropriately defined?
- Host is an organism which provides food to another organism.
 - Amensalism is a relationship in which one species is benefited whereas the other is unaffected.
 - c) Predator is an organism that catches and kills other organism for food.**
 - Parasite is an organism which always lives inside the body of other organism and may kill it.
22. Gause's principle of competitive exclusion states that:
- More abundant species will exclude the less abundant species through competition
 - Competition for the same resources excludes species having different food preferences
 - c) No two species can occupy the same niche indefinitely for the same limiting resources**
 - Larger organisms exclude smaller ones through competition
23. Sacred groves are especially useful in
- a) Preventing soil erosion**
 - Year-round flow of water in rivers
 - Conserving rare and threatened species
 - Generating environmental awareness
24. Measuring Biochemical Oxygen Demand (BOD) is a method used for
- a) Estimating the amount of organic matter in sewage water.**
 - Working out the efficiency of oil driven automobile engines.
 - Measuring the activity of *saccharomyces cerevisiae* in producing curd on a commercial scales
 - Working out the efficiency of RBCs about their capacity to carry oxygen
25. A lake which is rich in organic waste may result in
- Drying of the lake due to algal bloom
 - Increased population of fish due to lots of nutrients
 - c) Mortality of fish due to lack of oxygen**
 - Increases population of aquatic organisms due to minerals

BIO BOTANY

26. Advantage of cleistogamy
a) Higher genetic variability b) More vigorous offspring
c) No dependence on pollinators d) Vivipary
27. Geitonogamy involves
a) Fertilization of a flower by pollen from another flower of a same plant
b) Fertilization of a flower by pollen of the same flower
c) Fertilization of a flower by pollen from a flower of another plant in a same population
d) Fertilization of a flower by the pollen from a flower of another plant belongs to distant population.
28. Pollination in water hyacinth and water lily is brought about by the agency of
a) insects or wind b) birds
c) bats d) water
29. If a homozygous red flowered plant is crossed with a homozygous white flowered plant, then the offsprings will be
a) Half-white flowered b) Half-red flowered
c) All white flowered **d) All red flowered**
30. Which of the following conditions represents a case of co-dominant genes?
a) A gene expresses itself, suppressing the phenotypic effect of its alleles
b) Genes that are similar in phenotypic effect when present separately, but when together interact to produce a different trait
c) Alleles both of which interact to produce a trait which may or may not resemble either of the parental type
d) Alleles, each of which produces an independent effect in a heterozygous condition.
31. The distance between two genes in a chromosome is measured in cross-over units which represent
a) Ratio of crossing over between them
b) Percentage of crossing over between them
c) Number of crossing over between them
d) None of these
32. Genetic map is one that
a) Establish sites of the genes on a chromosome
b) Establishes the various stages in gene evolution
c) Shows the stages during the cell division
d) Shows the distribution of various species in a region
33. Which of the following statement is not true of two genes that show 50% recombination frequency?
a) The genes may be on different chromosomes
b) The genes are tightly linked
c) The genes show independent assortment
d) If the genes are present on the same chromosome, they undergo more than one crossover in every meiosis.

45. Which of the following is not one of the prime health risks associated with greater UV radiations through the atmosphere due to depletion of stratospheric ozone?
- a) Damage to eyes
b) **Increased liver cancer**
c) Increased skin cancer d. d) Reduced Immune system
46. Most animals that live in deep oceanic waters are
- a) **Detritivores**
b) Primary consumers
c) Secondary consumers d) Tertiary consumers
47. Selection is a method of
- a) cytology
b) plant phycology
c) **plant breeding**
d) genetics
48. Breeding of crops with high levels of minerals, vitamins and proteins is called
- a) somatic hybridization
b) **biofortification**
c) bio magnification d) micro propagation
49. Wonder wheat is a new wheat variety developed by
- a) **Mexico's International Wheat and Maize improvement centre**
b) Indian National Botanical Research Institute
c) Australian crop Improvement centre
d) African Crop Improvement centre
50. In genetic engineering, gene of interest is transferred to the host cell through a vector. Consider the following four agents (1-4) in this regard and select the correct option about which one or more of these can be used as vectors
- i. A bacterium
ii. Plasmid
iii. Plasmodium
iv. Bacteriophage
- a) 1 and 4 only b) **2 and 4 only** c) 1 only d) 1 and 3 only

ACCOUNTANCY

1. Incomplete records are generally maintained by _____
- a) company
b) Government
c) **Small sized sole trader business**
d) Joint stock company
2. The excess of assets over liabilities is _____
- a) Loss
b) Cash
c) **Capital**
d) Profit
3. Receipts and payments account is a ____.
- a) Nominal A/C
b) Personal A/C
c) **Real A/C**
d) None of these
4. Closing capital + drawings – additional capital- opening capital = _____.
- a) **Profit/loss**
b) Income/expenditure
c) Surplus/deficit
d) None of these
5. Donations received for a specific purpose is ____.
- a) Revenue receipt
b) **Capital receipt**
c) Revenue expenditure
d) Capital expenditure
6. Subscription due but not received for the current year is called ____.
- a) **An asset**
b) A Liability
c) An expense
d) Profit

7. Income and expenditure account is a _____.
a) **Nominal A/c** b) Real A/c c) Personal A/c d) None of these
8. Income and expenditure account is prepared to find out
a) Profit or loss b) Cash and bank balance
c) **Surplus or deficit** d) Financial position
9. Non-profit organizations are managed by _____.
a) Mangers b) Government c) **Trustee** d) All of the above
10. The goodwill or reputation earned by non-profit organizations depends on the basis of _____.
a) Investment made b) Subscription received
c) **Contribution to the welfare of society** d) Donations received
11. In the absence of a partnership agreement profits of the firm will be shared by the partners in _____.
a) **Equal ratio** b) Capital ratio c) Unequal d) None of these
12. What should be the minimum member of person to form partnership?
a) **2** b) 7 c) 10 d) 20
13. Which one of the following is shown in profit and loss appropriation account?
a) Office expenses b) Salary of staff
c) **Partners salary** d) Interest on bank loan
14. As per Indian partnership act, 1932 the rate of interest allowed on loans advanced by partners is
a) 8% per annum b) 12% per annum
c) 5% per annum d) **6% per annum**
15. Super profit is the difference between
a) Capital employed and average profit
b) Assets and liability
c) **Average and normal profit**
d) Current year's profit and average profit
16. Goodwill is defined as _____.
a) **Intangible asset** b) Fictitious asset c) Current asset
d) Liquid asset
17. The average rate of return of similar concerns is considered as
a) Average profit b) **Normal rate of return**
c) Gaining ratio d) None of these
18. If the old profit sharing ratio is more than the new profit sharing ratio of a partner, the difference is called _____.
a) Capital ratio b) **Sacrificing ratio**
c) Gaining ratio d) None of these
19. A new partner may be admitted into a partnership
a) With the consent of any one partner
b) With the consent of majority of partners
c) **With the consent of all old partners**
d) With the consent of 2/3 rd of old partners

46. Function Key F11 is used for
a) **Company features** b) Accounting vouchers
c) Company configuration d) None
47. Contra voucher is used for
a) Master entry b) **Withdrawal of cash from bank for office use**
c) Reports d) Credit purchase of assets
48. In 2009, Tally solutions introduced the software
a) **Tally, ERP 9** b) Tally, ERP 10 c) Tally, ERP 6.0 d) Tally, 8.0
49. Automated accounting is an approach to maintain up to date accounting records with the aid of
a) System software b) **Accounting software**
c) System hardware d) Accounting hardware
50. All transactions involving both cash account and bank account are recorded using
a) Receipt voucher b) Payment voucher
c) **Contra voucher** d) Sale voucher

COMMERCE

1. The first management principles were developed by
a) Victor Meldrew b) Charles c) **Henry Fayol** d) Taylor
2. The principles of management are significant because of
a) Changing technology b) **Utilization of resources**
c) Increase in efficiency d) Initiative
3. Nothing can be performed without
a) Organizing b) Staffing c) **Planning** d) Controlling
4. MBO is popularized in
a) **USA** b) Japan c) India d) UK
5. _____ keeps is management alert in opportunities and threats by identifying in critical problems
a) MBA b) **MBE** c) MBM d) MBO
6. In primary markets, property of shares which made it easy to sell newly issued security is considered as
a) **Increased liquidity** b) Decreased liquidity
c) Money flow d) Large funds
7. Money market where debit and stocks are traded and maturity period is more than a year is classified as
a) **Short term markets** b) Long term markets
c) Capital markets d) None of these
8. Right issue refers to the shares issued to
a) Employees b) Public
c) Existing directors d) **Existing shareholders**
9. Treasury bills and Commercial bills are the example of
a) **Money market** b) Capital market
c) Debt market d) None of these

26. The term consumerism in the early
a) 1950 b) 1954 c) 1956 **d) 1960**
27. Producers, sellers and service providers give importance to the
a) Workers b) Managers **c) Consumers** d) Owners
28. Which of the following does not fall under consumer rights?
a) Rights to the informed b) Rights to choose
c) Rights to seek government help **d) Rights to represent the consumer court**
29. For the District consumer Forum, is a value of upto
a) 20 lakhs b) 15 lakhs c) 25 lakhs d) 10 lakhs
30. President of consumer protection district forum is
a) Collector the district
b) A person who are qualified as advocate
c) A person who are qualified to be a district judge
d) None of these
31. The analysis of business environment helps a business to identify
a) New opportunities b) New employees
c) Profit maximization d) None of these
32. Every business has to take
a) Strategic decisions b) Dynamic decisions
c) Both d) None of these
33. Which of the following reduces the dependence on external commercial borrowings by attracting more foreign investments
a) Privatization **b) Liberalization** c) Globalization d) None of these
34. The trade liberalization often benefits developed countries rather than developing
a) Consumptions b) Sector **c) Economies** d) None of these
35. Sale of Goods Act was passed in the year
a) 1986 **b) 1930** c) 1982 d) 1955
36. Which of the following does not fall in the category of "Goods"?
a) Stock and Shares b) Money and actionable claims
c) Growing crops and grass d) None of these
37. The law relating to negotiable instruments is dealt in the
a) Sale of Contract Act 1930 b) Indian Contract Act 1872
c) Negotiable Instruments Act 1881 d) None of these
38. The number of parties to a promissory note is
a) 2 b) 4 c) 3 d) 6
39. In the case of Bill of Exchange drawee is the
a) Maker b) Payee **c) Acceptor** d) None of these
40. "Entrepreneurship is essentially a creative activity" – who said these words?
a) Schumpeter b) Richard c) Knight d) Jean Baptize
41. Women entrepreneurship is gaining importance in India in the wake of economic
a) Liberalization b) Globalization
c) (a) or (b) **d) (a) and (b)**

42. Gopal tooth powder manufacturer is an example of
a) Fabian entrepreneur b) Corporate entrepreneur
) Imitative entrepreneur **d) Drone entrepreneur**
43. Business entrepreneur is called
a) Solo entrepreneur b) Technical entrepreneur
c) Industrial entrepreneur d) Agricultural entrepreneur
44. Entrepreneur has to apply for
a) Statutory license b) Project report
c) Provisional Registration Certificate d) Permanent Registration Certificate
45. Which company shares can be freely transferable?
a) Private company b) Public company
c) both a and b d) None of these
46. Minimum number of members required to apply for incorporation certificate in a Public Limited company is
a) 3 b) 2 c) 7 d) 50
47. The alternative director is not a representative or agent of
a) Original director b) Shadow director
c) Additional director d) Nominee director
48. The minimum requirement of Director is
a) Two b) Three c) Four d) Five
49. The meeting held with the shareholders of the company is called
a) Board meeting b) Committees meetings
c) Shareholders meetings d) none of these
50. Meetings of directors are called
a) Special meetings **b) Board meetings**
c) Committee meetings d) None of these

COMPUTER APPLICATION

1. _____ refers to any type of application that involves more than one type of media such as text, Graphics, video, animation and sound
a) An executable file **b) multimedia** c) desktop publishing d) hypertext
2. Expand JPEG
a) Joint photo experts gross b) Joint photographic expression group
c) Joint processor experts group **d) Joint photographic experts group**
3. One of the disadvantages of the multimedia is its _____
a) Cost b) Adaptability c) Usability d) Relativity
4. How many major components are there in multimedia?
a) 4 b) 3 **c) 5** d) 2
5. _____ is DTP software
a) Lotus 1-2-3 **b) PageMaker** c) Maya d) Flash
6. _____ tool is used to draw a circle
a) Elipse b) Rectangle c) Star d) None of these

7. _____ is the process of moving up and down or left and right through the document window.
a) Formatting **b) Scrolling** c) Both 'a' and 'b' d) None of these
8. The _____ diagram gives a logical structure of the database graphically.
a) Entity-Relationship **b) Entity** c) Architectural Representation d) Database
9. Which is the MySQL instance responsible for data processing?
a) MySQL Client b) MySQL Server
c) SQL **d) Server Daemon Program**
10. _____ represents a "tuple" in a relational database
a) Table **b) Row** c) Column d) Object
11. Which of the following is not a database model?
a) Hierarchical b) Relational c) Network **d) Consistency**
12. What does PHP files have a default file extension?
a) .html b) .xml c) **.php** d) .ph
13. A PHP script should start with _____ and end with _____.
a) <php> b) <?Php?> c) <?> d) <?php?>
14. What will be the output of the following PHP code?
<?php
 \$num=1;
 \$num=2;
 Print \$num."+".\$num1;
?>
a) 3 **b) 1+2** c) 1.+2 d) Error
15. Which of the following is not a type of PHP Syntax?
a) Default Syntax b) Short open tags
c) HTML script embed tags **d) Script open Tags**
16. PHP arrays are also called as _____.
a) Vector arrays b) Perl arrays c) Hashes d) All of them
17. PHP's numerically indexed array begins with position _____.
a) 1 b) 2 **c) 0** d) -1
18. Which of the following is not array type?
a) Single dimensional b) Indexed array
c) Associative array d) Multidimensional array
19. Statement which is used to make a choice between two options and only option is to be performed is written as _____.
a) If statement **b) If else statement**
c) Then else statement d) Else one statement
20. What will be the output of the following PHP code?
<?php
 \$X=10;
 \$Y=20;
 If (\$X>\$Y+\$Y!=3)
 Print "hi";

```
Else
Print"how are you";
?>
```

- a) how are you **b) hi** c) error d) No output
21. Which of the following is the most important feature of many programming languages?
a) Class b) Objects c) Functions **d) Looping structure**
22. PHP _____ loops execute a block of code while the specified condition is true.
a) Do while b) For each **c) While** d) For
23. PHP is a _____ typed language.
a) User b) Loosely **c) Server** d) System
24. HTML classes that are already defined and allow us to apply styles on them are called as
a) Pseudo classes **b) Css classes**
c) Javascript classes d) None
25. Which of the following function, reads the entire contents of a file?
a) fgets () **b) file_get_contents ()** c) fread () d) readfile ()
26. How many parameters are required for the MySQLi query function in PHP?
a) 2 b) 3 c) 4 d) 5
27. Which version of PHP supports MySQLi functions?
a) version 2.0 b) version 3.0 c) version 4.0 **d) version 5.0**
28. A Computer network device that originates the route and terminates the data were called as _____
a) Hub **b) Resource** c) Node d) Cable
29. Which one of the following periods, the speed capacity supported towards gigabit on computer network?
a) SABRE b) SAGE **c) NEW FIBRE OPTICS** d) ARCNET
30. _____ use less power comparing with a single transmitter or satellite often a cell towers nearer
a) Mobile devices b) Transistors
c) WIFI d) Communication
31. Which one of the following will be the easier way to use Internet technology and the public telecommunication system to securely share business's information with suppliers, vendors, partners and customers?
a) **Extranet** b) Intranet c) arpanet d) arcnet
32. RFID stands for _____.
a) Radio Free identification b) Real Frequency identity
c) Radio Frequency indicators **d) Radio Frequency Identification**
33. TCP/IP stands for _____.
a) Transfer Control Protocol/Internet Protocol
b) Transmission Control Protocol / Information Protocol
c) Transmission Control Procedure / Internet Procedure
d) Transmission Control Protocol / Internet Protocol

46. Which of the following is true about Virtual Payment Address (VPA) ?
 a) Customers can use their email id as VPA
 b) VPA does not include numbers
c) VPA is a unique ID
 d) Multiple bank accounts cannot have a single VPA
47. Which of the following is correctly matched?
 a) Credit Cards – pay before
b) Debit Cards – pay now
 c) Stored Value Card – pay later
 d) Smart card – pay anytime
48. The security authentication technology does not include
 (i) Digital Signatures (ii) Digital Time Stamps (iii) Digital Technology (iv) Digital Certificates
 a) i, ii & iv
b) ii & iii
 c) i, ii & iii
 d) all the above
49. _____ protocol is used for securing credit cards transactions via the Internet
a) Secure Electronic Transaction (SET)
 b) Credit Key Verification
 c) Symmetric Key Encryption
 d) Public Key Encryption
50. EDIFACT stands for _____
 a) EDI for Admissible Commercial Transport
 b) EDI for Advisory Committee and Transport
c) EDI for Administration, Commerce and Transport
 d) EDI for Admissible Commerce and Trade

COMPUTER SCIENCE

1. Bundling two values together into one can be considered as _____.
a) Pair
 b) Triplet
 c) Single
 d) Quadrat
2. Big Ω is the reverse of _____.
a) Big O
 b) Big Θ
 c) Big A
 d) Big S
3. The Extension of Python files is _____.
 a) .Pyt
 b) .txt
 c) .Pdm
d) .Py
4. The bin() function returns a binary string prefixed with _____.
 a) 0
 b) 1
c) Ob
 d) 1b
5. Which of the following set operation includes all the elements that are in the two sets but not the one that are common to the two sets?
a) Symmetric difference
 b) Difference
 c) Intersection
 d) Union
6. The variables in a function definition are called as _____.
 a) Subroutines
 b) Function
 c) Definition
d) Parameters
7. Two main measures for the efficiency of an algorithm are _____ and _____.
 a) Process and memory
 b) Complexity and capacity
c) Time and space
 d) Data and space
8. The Expansion of API is _____.
 a) Application Programming Interpreter
b) Application Programming Interface
 c) Application Performing Interface
 d) Application Programming Interlink
9. A framework for interfacing Python and C++ is _____.
 a) Ctypes
 b) SWIG
 c) Cython
d) Boost

10. Expansion of GIS ____
a) **Geographic Information System** b) Global Information System
c) Global Interchange Services d) Geographic Information Services
11. The clause used to sort data in a database
a) SORT BY **b) ORDER BY** c) GROUP BY d) SELECT
12. The process of binding a variable name with an object is called ____.
a) Scoping **b) Mapping** c) Modules d) Program
13. The complexity of a linear search algorithm is _____.
a) O(n) b) O(logn) c) O(n²) d) O(nlogn)
14. The positive subscript that is assigned to the last character is _____.
a) 0 b) 1 c) n **d) n-1**
15. The module which allows you to interface with the Windows operating system is _____.
a) os module b) sys module c) csv module d) getopt module
16. The function that returns the largest value of the selected column is _____.
a) MAX() b) LARGE() c) HIGH() d) MAXIMUM()
17. The process of sub dividing a computer program into separate sub-programs is called
a) Procedural Programming **b) Modular Programming**
c) Event Driven Programming d) Object Oriented Programming
18. How many types of Visualization under Matplotlib?
a) 4 **b) 6** c) 7 d) 8
19. Named blocks of code that are designed to do one specific job are called as _____.
a) Loop b) Branching **c) Function** d) Block
20. This symbol is used to print more than one item on a single line.
a) Semicolon(;) b) Dollar(\$) **c) Comma(,)** d) Colon(:)
21. The expansion of CRLF is
a) Control Return and Line Feed b) Carriage Return and Form Feed
c) Control Router and Line Feed **d) Carriage Return and Line Feed**
22. The data type whose representation is unknown is called
a) Built-in data type b) Derived data type
c) Concrete data type **d) Abstract data type**
23. The TCL command used to restore the database to the last commit state _____.
Commit b) Save point c) Insert **d) Rollback**
24. The python file mode opens a file for exclusive creation _____.
a) w **b) x** c) b d) a
25. There are many _____ functions that come with the language python.
a) user defined **b) built-in** c) lambda d) recursion
26. This is the theoretical performance analysis of an algorithm _____.
a) A Prior Estimates b) Posterior testing
c) Space factor d) Time factor
27. Non keyword variable arguments are called as _____.
a) sets b) List **c) Tuples** d) Dictionary

28. The function defined inside a class is called as _____.
a) Attribute b) parameter c) arguments **d) Methods**
29. The SQL command truncate comes under _____.
a) DDL b) DML c) TCL d) DQL
30. Plot is a type of plot that shows the data as a collection of points
Line **b) scatter** c) Box d) Pie
31. The floor division operator in python
a) / b) % c) %% **d) //=**
32. The _____ provides a set of definitions specify the storage structure and access methods used by the database system.
a) DML b) DCL c) TCL **d) DDL**
33. The formatting character is used to print exponential notation in uppercase.
a) %e **b) %E** c) %g d) %n
34. Which is a mutable and unordered collection of elements without duplicates?
a) List b) Tuple **c) set** d) Dictionary
35. The class instantiation means:
a) creating a class b) creating a constructor
c) creating a selector **d) creating an object**
36. _____ are the variables in a function definition and arguments are the values which are passed from a function to a function.
a) Expressions b) Qualifiers c) Selectors **d) Parameters**
37. A _____ is a unit of code that is often defined with in a greater code structure.
a) functions b) interface c) implementation d) qualifiers
38. In dynamic programming the technique of storing the previously calculated values are called?
a) saving value property b) storing value property
c) memoization d) mapping
39. A _____ operator is also called as a comparative operator.
a) arithmetic b) logical c) assignment **d) relational**
40. _____ Function is used to add more than one element to an existing list.
a) append() **b) extend()** c) insert() d) len()
41. The relational database model was first proposed in _____.
a) 1978 b) 1976 **c) 1970** d) 1971
42. ANSI stands for _____.
a) American National Standard Interchange **b) American National Standards Institute**
c) American National System Interchange d) American National System Institute
43. SWIG stands for _____.
a) Simplified Wrapper Interface Generator b) System Web Interface Generator
c) Simplify Web Interface Generator **d) Semantic Web Interest Group**
44. _____ is the most commonly used statement in SQL.
a) Insert b) Update c) Delete **d) Select**

45. The box plot is a standardized way of displaying the distribution of data based on number summary.
a) 5 b) 4 c) 3 d) 6
46. Histogram presents numerical data where as _____ graph shows categorical data.
a) line **b) bar** c) pie d)allofthese
47. _____ scopes refer to variables defined in current function.
a) Local b) Enclosed c) Global d)Builtin
48. IDLE stands for.
a) Information Display Learning Embedded
b) Integrated Display Learning Environment
c) Integrated Development Link Environment
d) Integrated Development Learning Environment
49. _____ Values are ignored.
a) Numeric b) Decimal **c) Null** d) Float
50. Which of the following is an organized collection of data?
(a) Database (b) DBMS (c) Information (d)Records

ECONOMICS

1. The General Theory of Employment, Interest and Money published in _____.
a) 1936 b)1934 c)1984 d) 1999
2. The growth and development of an economy and the factors determining it could be understood only through _____.
a) Micro Analysis **b)Macro analysis**
c) Micro and Macro Analysis d) None of the About
3. What are the three major types of economic systems?
a) Capitalistic Economy (Capitalism) b)Socialistic Economy (Socialism)
c) Mixed Economy (Mixedism) **d) All of the above**
4. National income is measured by using methods.
(a) Two **(b) Three** (c) Five (d) Four
5. PQLI is the indicator of _____.
a) Economic growth **b) Economic welfare**
c) Economic Progress d) Economic Development
6. $GNP = C + I + G + (X - M)$ "C" means _____.
a) C - Cost Consumption Expenditure b) C - Consumption Expenditure
c) C - Public Consumption Expenditure **d) C - Private Consumption Expenditure**
7. Disposable Income = Personal income - _____.
a) Direct Tax b)Indirect Tax c) GST d) VAT
8. J.B. Say is a _____.
a) Neo Classical Economist **b) Classical Economist of Employment**
c) Modern Economist d) New Economist
9. John Maynard Keynes was one of the most influential economists of the _____.
a) 20thCentury b)19thCentury c)18thCentury d)17thCentury

10. The Say's Law of market is based on the _____
a) Short - Run Analysis b) **Long - Run Analysis.**
c) Short and long - Run Analysis. d) None of the Above
11. Inflation means _____.
a) **Prices are Rising** b) Prices are Falling
c) Value of Money is Increasing d) Prices are Remaining the Same
12. According to classical theory, the rate of interest is a reward for _____.
a) Investment b) Demand c) Capital d) **Saving**
13. The publication of this book, classical theory was developed by David Ricardo, J.S.Mill, J.B.Say
a) Adam Smith b) Kenyes c) **A.C.Pigou** d) None of the Above
14. Adam smith wrote the book "An Enquiry into the Nature and Causes of the Wealth of Nations" in _____.
a) 1773 b) 1774 c) 1775 d) **1776**
15. The consumption function or propensity to consume refers to _____ consumption relationship.
a) **Income** b) Demand c) Consumer d) Saving
16. The marginal propensity to consume may be defined as the ratio of the changes in the consumption to _____.
a) Change in demand b) Non change in demand
c) **Change in income** d) Non change in income
17. The average propensity to save is the ratio of saving to income
a) **APS = S / Y** b) APS = I / Y c) APS = C / Y d) None of the Above
18. Which makes the discounted present value of the expected income stream equal to the cost of capital?
a) Marginal Efficiency of Consumption b) Marginal Efficiency of Income
c) **Marginal Efficiency of Capital** d) Marginal Efficiency of Cost
19. The term MEC was introduced by _____.
a) Adam Smith b) **J.M. Keynes** c) Ricardo d) Malthus
20. The multiplier is defined as the ratio of the _____ to change in investment.
a) Change in National Budget b) Change in National Interest
c) **Change in National Income** d) None of the Above
21. Irving Fisher who published his book, "The Purchasing Power of Money" in _____.
a) **1911** b) 1912 c) 1913 d) 1914
22. The studies of these _____ are called the study of Business cycle or Trade cycle or Industrial Fluctuation.
a) Ups b) Downs c) **Ups and Downs** d) None of the above
23. In India, currency notes are issued by _____.
a) **Reserve Bank of India** b) SBI c) IDBI d) ICICI
24. _____ is a card allowing the holder to transfer money electronically from their bank account when making a purchase.
a) Credit card b) **Debit card** c) ATM card d) Pan card

25. ATMs transformed the bank tech system when they were first introduced in
a) 1966 **b) 1967** c) 1968 d) 1969
26. The Indian Prime Minister Mr. Narendra Modi announced the demonetization of all ₹500 and ₹1000 bank notes of the Mahatma Gandhi Series. However, more than 99% of those currencies came back to the RBI.
a) 26 November 2016 b) 18 November 2016
c) 8 November 2016 d) 21 November 2016
27. The Central bank is ----- authority of any country.
a) Monetary b) Fiscal c) Wage d) National Income
28. The BoP is said to be balanced when the receipts (R) and _____ are just equal
a) Bills b) Profits **c) Payments** d) Price
29. How many types of BOP Disequilibrium?
a) 1 b) 2 **c) 3** d) 4
30. The IMF and World Bank were started in _____.
a) 1943 b) 1944 **c) 1945** d) 1946
31. Membership in the International Monetary Fund is a prerequisite to becoming a member of _____.
a) IBRD b) RBI c) IDRD d) IDBI
32. Net export equals _____.
a) Export x Import b) Export + Import
c) Export – Import d) Exports of Services Only
33. _____ was established in 1995 as a successor to the GATT.
a) GATT **b) WTO** c) WWW d) None of the Above
34. The IMF has 189 member countries with the Republic of Nauru joined in
a) 2015 **b) 2016** c) 2017 d) 2018
35. The headquarters of ASEAN is _____.
a) Jakarta b) New Delhi c) Colombo d) Tokyo
36. Public finance is one of those subjects that lies on the border line between Economics and Politics.
a) Huge Dalton b) A.C.Pigou c) None of the above d) Adam Smith
37. _____ refers to government spending incurred by central, state and local governments of a country.
a) Public cost b) Public Income **c) Public expenditure** d) None of the above
38. GST is the equivalence of _____.
a) Sales tax b) Corporation tax c) Income tax d) Local tax
39. _____ is a situation in which the estimated revenue of the government during the year is equal to its anticipated expenditure.
a) **Balanced budget** b) Public expenditure
c) Profits d) Payments
40. Fiscal deficit (FD) = _____ + Government's market borrowings and liabilities
a) Budget deficit b) Balanced budget
c) Public expenditure d) Planning

41. 15th Finance Commission's recommendations on tax sharing between the centre and the States are to kick in from April
a) 2018 b) 2019 c) **2020** d) 2021
42. Fiscal policy means the use of public finance or expenditure, taxes, borrowing and financial administration to further our national economic objectives
a) Huge Dalton b) A.C.Pigou c) AnatolMurad d) **Buehler**
43. The ecosystem is the smallest unit of
a) Ionosphere b) Lithosphere c) **Biosphere** d) Mesosphere
44. The Air (Prevention and Control of Pollution) Act
a) **1981** b) 1982 c) 1983 d) 1984
45. The world's children under the age of 15 (1.8 billion children) breathe polluted air that puts their health and development at serious risk – WHO
a) **93%** b) 94% c) 95% d) 96%
46. "The alternative approach (to sustainable development) is to focus on natural capital assets and suggest that they should not decline through time." –Pearce, Markandya and Barbier
a) 1988 b) **1989** c) 1990 d) 1919
47. _____ contribute to their environment by providing oxygen, improving air quality, climate amelioration, conserving water, preserving soil and supporting wildlife.
a) Soil b) Water c) **Trees** d) All of these
48. Sustainable Development Goals and targets are to be achieved by _____.
a) 2020 b) 2025 c) **2030** d) 2050
49. The World Bank in its World Development Report classifies various countries on the basis of Gross National Income (GNI).
a) **Per Capita** b) Income c) GDP d) All of The Above
50. Economic Planning is "collective control or suppression of private activities of production and exchange".
a) **Robbins** b) A.C.Pigou c) AnatolMurad d) Buehler

GEOGRAPHY

1. _____ is the statistical study of human population. It includes the study of size, structure and distribution of population as well as changes in time and location in response to birth, migration, aging and death.
a) **Demography** b) Geography
c) Anthropogeography d) Bio Geography
2. One among the given is not a solution to overpopulation.
a) Creating and Implementing National and Worldwide Multi-Media Overpopulation Awareness Campaigns
b) Aiming for Single-Child Families.
c) Treating it as a National Security issue
d) **Encouraging large family.**
3. Which of the following are not densely populated areas?
a) The Ganges valley, Brahmaputra valley, and Eastern Asia.
b) The Ganges valley, Brahmaputra and NE USA.

- c) Sahara, Eastern Siberia and Patagonia region.**
d) Brahmaputra valley, Hwang – Ho valley and North Western Europe
4. Most anthropologists believe that hundreds of thousands of years ago humans first appeared in
a) The Euphrates and Tigris valley
c) The Great Rift Valley in East Africa
b) The Indus valley of Asia
d) The Nile valley of Africa
5. The first urban settlement to reach a population of one million (Million city) is
a) London
b) Paris
c) New York
d) Tokyo
6. It is predicted that by 2050 about the developing world and the developed world will be urbanized to
a) 74% & 76% respectively
b) **64% & 86% respectively**
c) 54% & 96% respectively
d) 44% & 66% respectively
7. As per 2011 census, which one of the following is correct?
a) Delhi's population rose by 4.1%
b) Mumbai's by 5.1%
c) Kolkata's by 4%
d) Chennai's by 5%
8. One of the following statements is incorrect about the dispersed settlement.
a) Houses are spaced far apart
b) Often interspersed with fields.
c) Their market and some other activities are centralized where they participate together
d) Found in the fertile river valley
9. The largest producer of Geo Thermal Energy in the world is Mineral Characteristics
a) Russia
b) The U.S.A
c) Canada
d) China
10. Pick out the statement which is untrue about the renewable resources.
a) The resources which can always be available for use after their usage.
b) Resources have natural regeneration and are inexhaustible.
c) Air, water, solar energy etc. are examples for renewable resources.
d) Available in finite quantities and cannot be obtained once if they are utilized.
11. Identify the one which is untrue about the minerals.
a) Minerals generally occur in the cracks, crevices, faults and joints of the igneous and Metamorphic rocks.
b) Mineral in smaller occurrence in the joints of the rocks is called a 'Vein'.
c) Mineral in a larger occurrence in the joints of the rocks is called a 'load'.
d) When the decomposed rocks are washed away by water, the soluble particles are removed, leaving a mass containing ores. Such occurrences are called residual mass.
12. Viticulture or grape cultivation is a speciality of
a) The Pampas region
b) The savannah region
c) The Sahara region
d) The Mediterranean region
13. Which one of the following consists of only the developed countries?
a) Australia, Kenya, Pakistan, Germany and Italy
b) Australia, Canada, France, Germany and Italy
c) Australia, Sri Lanka, Thailand, Germany and Italy
d) Pakistan, Sri Lanka, France, Germany and Italy

14. Identify the whichone is wrongly matched.
a) Foragers — Region b) Inuit — Arctic region
c) Pygmies — Kalahari d) **Aborigines — South America**
15. Which one of the following is not the characteristic of the Least Developed countries?
a) Low Gross Domestic Product b) **high literacy rate**
c) Unequal distribution of income d) high level of unemployment
16. Whichone of the following is not the characteristics of the Developed countries?
a) Lower per capita income
b) Better housing and living conditions
c) High GDP
d) Infrastructural and technological advancement
17. Which one of the following is not a plantation crop?
a) Tea b) coffee c) **Corn** d) cocoa
18. One of the existing languages in the world dies every
a) 14 minutes b) **14 days** c) 14 months d) 14 years
19. One of the UNESCO's five levels of language risk, definitely endangered languages children does not speak
a) 457 languages b) 970 languages
c) **646 languages** d) 374 languages
20. Who stated the following?
"Who rules East Europe commands the Heartland.
Who rules Heartland commands World Island.
Who rules World Island commands the World".
a) Humboldt b) Hutton c) Spikeman d) **Mackinder**
21. Which country has the maximum number of neighbours touching its border?
a) China b) Canada c) Russia d) India
22. Which of the following is an example of Relict Boundaries?
a) Persia and the boundary between east & West Germany
b) Pakistan occupied Kashmir
c) N. Africa and the state boundaries of USA
d) The countries of Europe
23. The Heartland theory was proposed by
a) Humboldt b) Hutton c) Spikeman d) **Mackinder**
24. Which of the given statements is true?
a) India has the world's highest number of languages.
b) India has the world's third highest number of languages, after China and Russia.
c) **India has the world's second highest number of languages, after Papua New Guinea.**
d) India and England have the third and fourth highest number of languages respectively.
25. Which one is wrongly matched?
a) GPS — United States b) GLONASS — Russia c) **GALILEO — Japan**
d) BEODOU — China
26. GPS uses a constellation of
a) 28 satellites b) 30 satellites c) 40 satellites d) **24 satellites**

27. IRNSS provides location information service to users in India and the region extending from the Indian boundary for up to
a) 2300 km b) 2000 km c) 1000 km **d) 1,500 km.**
28. Which one of the following is not the remote sensing techniques used in the field of geology?
a) Lithological mapping b) Structural mapping
c) Wildlife exploration d) Hydrocarbon exploration
29. Which one of the following is not a sun synchronous satellite?
a) NOAA SEASAT b) TIROS c) SKYLAB **d) METEOSAT**
30. The wave lengths of the passive remote sensing ranges from
a) 0.4 to 1.0 mm b) 0.8 to 2.0mm c) 0.2 to 1.0 mm d) 0.6 to 0.4 mm
31. Which one of the following is the fastest computer in the world?
a) Sunway TaihuLight **b) Summit** c) Pratyush d) Param 10000
32. GNSS satellites' orbit is situated about _____ km above the earth's surface
a) 15,000 km **b) 20,000 km** c) 10,000 km d) 22,000 km
33. Which one of the following is a geosynchronous satellite?
a) INTELSAT b) Corona c) MIDAS d) SAMOS
34. Who headed the World Commission on Environment and Development?
a) George Perkins Marsh's **b) Gro Harlem Brundtland**
c) Edward Goldsmith's d) Fruitz Schumacher's
35. Sea level rise is occurring steadily at the rate of _____ per year
a) 0.01 to 0.25 centimetre **b) 0.1 to 0.25 centimetre**
c) 0.1 to 0.025 centimetre d) 1 to 0.25 centimetre
36. Rain water harvesting improves the quality of _____ water.
a) Sea b) Ocean c) River **d) Under ground**
37. Which is the best strategy to reduce toxic gas emissions.
a) Public motor transport b) Use private transport
c) Use of electricity powered cars **d) Two wheelers can be an alternative**
38. In which year was EIA introduced in India
a) 1947 b) 1950 c) 1956 **d) 1978**
39. The United Nations 17 Sustainable Development Goals and 169 targets are part of the 2030 Agenda for Sustainable Development adopted at the UN General Assembly Summit in September 2015 by
a) 183 **b) 193** c) 173 d) 163
40. The International Union for the Conservation of Nature introduced the term "sustainable development in
a) 1990 **b) 1980** c) 1970 d) 1960
41. In the Paris Agreement at the COP21 in Paris on 12 December 2015 all countries agreed to work to limit global temperature rise to
a) Below 2 degrees Celsius
b) Above 2 degrees Celsius
c) Between 2 degrees Celsius and 4 degrees Celsius
d) Between 2 degrees Celsius and 6 degrees Celsius

42. The spreading speed of low fire is
a) 1 – 3 m/sec b) 3 – 5 m/sec c) 4 – 6 m/sec d) 6 – 8 m/sec
43. It is important to practice Drop, Cover, Hold for
a) Fire **b) Earthquake** c) Lightning d) Flood
44. To cut off all branches of trees standing near our house is to prevent
a) Earthquake b) Flood **c) Fire** d) Drought
45. The 1984 Industrial gas disaster occurred in
a) Delhi b) Pune **c) Bhopal** d) Noida
46. The percentage of death worldwide due to unintentional injury during drowning is _____.
a) 5% **b) 7%** c) 10% d) 2%
47. The natural gas vent known as the Eternal fire of Baba Gurgur is located at which country?
a) Iran **b) Iraq** c) Yeman d) Kuwait
48. Every year, _____ people are killed in the road accidents.
a) 4.34 million b) 2.34 million c) 3.24 million **d) 1.34 million**
49. In India _____ of stampede occur in religious events.
a) 69% b) 59% **c) 79%** d) 49%
50. Drowning account for _____ of deaths in flood disasters.
a) 75% b) 65% c) 55% d) 85%

HISTORY

1. The Communist Party of India was formed in the year
(a) 1920 **(b) 1925** (c) 1930 (d) 1935
2. The Two Nation Theory first came from
(a) Rajaji (b) Ramsay MacDonald
(c) **Muhammad Ali Jinnah** (d) Sir Wazir Hasan
3. The Interim Government of 1946 was headed by
(a) Jawaharlal Nehru (b) Moulana Abul Kalam Azad
(c) Rajendra Prasad (d) Vallabhai Patel
4. The Adoption of the Constitution was on
(a) January 30, 1949 (b) August 15, 1947
(c) January 30, 1949 **(d) November 26, 1949**
5. The Mahatma Gandhi National Rural Employment Guarantee Act was passed in the year
(a) 2005 (b) 2006 (c) 2007 (d) 2008
6. How many public sector enterprises were functioning in India in 1951?
(a) 5 (b) 7 (c) 6 (d) 225
7. The storming of the Bastille happened on
(a) June 5, 1789 **(b) July 14, 1789**
(c) November 11, 1789 (d) May 1, 1789

24. INA was founded with the help of
(a) Germany **(b) Japan** (c) France (d) USA
25. The Home Rule Movement in South India was started by
(a) Tilak **(b) Annie Besant** (c) B.P. Wadia (d) Col. H.S. Olcott
26. English education was introduced in India in the year _____
(a) 1825 **(b) 1835** (c) 1845 (d) 1855
27. Who said "Sovereignty is my birthright, I will achieve it."?
a) BalaGangadhara Tilak b) Dadabai Naoroji
c) SubhashChandra Bose d) Bharatiyar
28. Founder of the Indian National Congress
a) Subhash Chandra Bose b) Gandhiji
c) U. Hume d) BalaGangadharaTilak
29. As the next President of the Congress for the Congress Conference to be held at Surat ,
Whose name was proposed by the ultra-nationalists for election?
a) AravindaGhosh b) DadabhaiNaoroji
c) Peroz Shah Mehta **d) LalaLajpatirai**
30. who is the founder of Anushilan Samiti in Calcutta?
a) PulinBihari Das
b) HemachandraKanungo
c) Jatinderanath Banerjee and Parinder Kumar Ghosh
d) KuthiramBhosh and PrafullaChaki
31. Who initiated the autonomy movement in South India?
a) Thilakar **b) Anniebesant** c) PP Wadia d) HS Alcott
32. Author of the book "Indian Unrest".
a) LalaLajapatirai **b) Valentine Siroli**
c) Thilakar d) Anniebesant
33. Who was the political guru of Gandhiji?
a) Thilakar **b) Gokhale** c) R.U. Banerjee d) A.P. Ranade
34. What is the name of the party founded by Motilal Nehru and CR Das in 1923?
a) **Swarajya Party** b) Qatar Party
c) Independence Party d) Communist Party
35. In which year was the Communist Party of India (foreign on Indian soil) founded?
a) 1920 (Foreign) **b) 1925 (India)** c) 1930 d) 1935
36. What is KalpanaDutt associated with?
a) Hindustan Socialist Republican Association b) Bengal Sabha
c) Republic of India Army d) None of these
37. Congress won the elections held in 1937 ?
a) 12 provinces **b) 7 provinces** c) 5 provinces d) 8 provinces
38. When the Muslim League observed Direct Action Day ?
a) 25 December 1942 **b) 16 August 1946**
c) 21 March 1937 d) 22 December 1939
39. Cripps delegation visited India during whose rule?
a) Lord Wavell **b) Lord Linlithgow**
c) Lord Mountbatten d) None of these



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