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॥ आपकी सफलता, हमारी प्रतिबद्धता ॥

1. Answer D

Solution

Mewati Dialect: Alwar and Bharatpur

Four main forms/sub-dialects of Mewati:

1. Rathi Mewati
2. Kather Mewati
3. Metha / Mahetha Mewati
4. Nheda / Naheda Mewati

Overall, Mewati is a blend of Rajasthani, Braj, and Haryanvi.

मेवाती बोली:- अलवर भरतपुर

रूप/उपबोलियां मेवाती के 4 मुख्य

1. राठी मेवाती -
2. कठेर मेवाती
3. मेठा / महेठा मेवाती
4. न्हेड़ा / नहेड़ा मेवाती

कुल मिलाकर मेवाती राजस्थानी + ब्रज + हरियाणवी का मिश्रण।

2. Answer C

Solution

"Rasraj" Manuscript:

Author – Poet Matiram

Image 63 (Miniature Painting) – Originating from the Mahamandir (Jodhpur) of the Marwar (Jodhpur) school; currently housed in the Mehrangarh Museum.

Mahamandir – Jodhpur's renowned Nath temple; an 84-pillared structure and the largest temple of the Nath sect.

"रसरज" ग्रंथ:

लेखक - कवि मतीराम

चित्र 63 लघुचित्र - मारवाड़ (जोधपुर), शैली के महामंदिर (जोधपुर) से प्राप्त अब मेहरानगढ़ म्यूजियम में सुरक्षित।

महामंदिर - जोधपुर का प्रसिद्ध नाथ मंदिर, 84 खंभों वाला, नाथ सम्प्रदाय का सबसे बड़ा मंदिर।

3. Answer A

Solution

The influence of the Southern style is evident in the Bundi school—manifested in features such as deep colors, a golden glow, sharp noses, small eyes, depictions of trees resembling Southern banana leaves, a prevalence of elephants, and tall figures.

This influence became particularly pronounced during the reigns of Rao Bhav Singh (1658–1682) and Aniruddh Singh (1682–1695).

Bhav Singh and Aniruddh Singh served as 'Mansabdars' under the Mughals (specifically, Aurangzeb).

They participated in Aurangzeb's Deccan campaigns (against Bijapur and Golconda) and spent several years in the region.

Upon their return, they brought back Deccan painters as well as Southern styles of attire, costumes, and color palettes to Bundi.

Consequently, the Bundi school reflects a unique confluence of Deccan, Mughal, and Rajasthani artistic traditions.

बूंदी शैली में दक्षिण शैली का प्रभाव दिखता है - जैसे गहरे रंग, सुनहरी आभा, नुकीली नाक, छोटी आँखें, वृक्षों में दक्षिणी केले के पत्ते जैसे, हाथियों की अधिकता, लम्बे कद।

यह प्रभाव खासकर राव भावसिंह (1658-1682) और अनिरुद्ध सिंह (1682-1695) के काल में आया।

भावसिंह और अनिरुद्ध सिंह मुगलों (औरंगजेब) के मनसबदार थे। औरंगजेब के दक्षिण अभियान (बीजापुर, गोलकुंडा) में इन्होंने भाग लिया कई साल दक्षिण में रहे।

वहां से लौटते समय दक्कनी चित्रकार, दक्षिणी वेशभूषा, परिधान, रंग संयोजन को बूंदी ले आए।

इसलिए बूंदी में दक्कनी + मुगल + राजस्थानी का त्रिवेणी संगम दिखता है।

4. Answer C

Solution

Main Centre – Jodhpur (Marwar)

Sub-styles –

- Bikaner Style – Rao Bika established a separate kingdom, but the painting style originated from Marwar; features strong Mughal influence and the 'Usta' art form.
- Kishangarh Style – Kishangarh was founded by Kishan Singh (son of the King of Jodhpur); thus, it originated from Marwar but later developed a distinct identity—becoming the most famous sub-style—largely due to Nagridas and the 'Bani-Thani' painting. Nihalchand was a prominent painter of this style.
- Nagaur Style – Located near Jodhpur; a sub-style of Marwar, notable for the frescoes in Nagaur Fort.
- Other sub-styles – Jaisalmer, Pali, Ghanerao, Ajmer.

मुख्य केन्द्र - जोधपुर (मारवाड़)

उपशैलियाँ -

- बीकानेर शैली- राव बीका ने अलग राज्य बनाया, पर चित्रशैली मारवाड़ से निकली मुगल प्रभाव ज्यादा, उस्ता कला।
- किशनगढ़ शैली- किशन सिंह ने किशनगढ़ बसाया (जोधपुर के राजा का पुत्र), इसलिए मारवाड़ से निकली, पर बाद में नागरीदास/बणी-ठणी के कारण अलग पहचान सबसे प्रसिद्ध उपशैली। निहालचंद चित्रकार।
- नागौर शैली- जोधपुर के पास ही, मारवाड़ की ही उपशैली नागौर किले के भित्तिचित्र।
- अन्य उपशैलियाँ जैसलमेर, पाली, घाणेरवा, अजमेर।

5. Answer A

Solution

9 Types of Forts

Giri Durg (Hill Fort) – Chittor, Kumbhalgarh, Mehrangarh

Jal/Audak (Water Fort) – Gagron

Dhanvan/Maru (Desert Fort) – Jaisalmer, Junagadh

Van (Forest Fort) – Siwana, Ranthambore

Parikh (Moated Fort) – Bharatpur (Lohagarh), Chittor

Sainya Durg (Military Fort) – Fortified by an army

Sahaya Durg (Fort of Allies) – Fortified with the support of kinsmen/allies

Paridh (Fort with a Perimeter Wall) – Encircled by a surrounding wall

Eran (Fort in Difficult Terrain) – Fort located in a forest with a rugged/inaccessible approach path

9 प्रकार के दुर्ग

गिरि दुर्ग - पहाड़ पर चित्तौड़, कुम्भलगढ़, मेहरानगढ़

जल/औदक - गागरोण

धान्वन/मरु - जैसलमेर, जूनागढ़

वन - सिवाणा, रणथंभौर

पारिख - खाई वाला - भरतपुर (लोहागढ़), चित्तौड़

सैन्य दुर्ग - सैनिकों से घिरा

सहाय दुर्ग - बंधु-बंधव वाला

पारिध - चारों तरफ परिधि बनी हो

एरण - किला जंगल में हो तथा रास्ता खराब हो

6. Answer B

Solution

The Juna Barmer Fort was built by King Bahadrao in the 13th century. In 1552 AD, Rawat Bhimaji independently established the new town of Barmer. The Juna Fort located here has only one point of entry.

जूना बाड़मेर दुर्ग का निर्माण 13वीं सदी में राजा बाहड़राव ने करवाया था। 1552 ई. में रावत भीमाजी ने स्वतंत्र रूप से नवीन बाड़मेर बसाया था। यहाँ स्थित जूना दुर्ग में केवल एक ही मार्ग से प्रवेश किया जा सकता है।

7. Answer C

Solution

The Someshwar Temple is located in Barmer.

सोमेश्वर मंदिर बाड़मेर में स्थित है।

8. Answer B

Solution

The Buland Darwaza was built by Sultan Mahmud Khilji (of Malwa)

during the 15th century (approximately 1455 CE).

It is the tallest and main entrance to the Dargah, located on the southern side.

Note: The Buland Darwaza at Fatehpur Sikri (near Delhi) was built by Akbar.

बुलंद दरवाजा सुल्तान महमूद खिलजी (मालवा का खिलजी) ने बनवाया

समय 15वीं सदी (लगभग 1455 ई.) में।

यह दरगाह का सबसे ऊँचा और मुख्य प्रवेश द्वार है दक्षिण दिशा में।

नोट दिल्ली फतेहपुर सीकरी वाला बुलंद दरवाजा अकबर ने बनवाया

9. Answer A

Solution

Khetri Mahal – The Hawa Mahal of Jhunjhunu / The Hawa Mahal of Shekhawati:

Location – Khetri, in Jhunjhunu district.

Construction – Built by Raja Bhopal Singh of Khetri in 1760 AD.

खेतड़ी महल - झुंझुनू का हवामहल / शेखावाटी का हवामहल:

स्थान - खेतड़ी, झुंझुनू जिले में।

निर्माण - 1760 ई. में खेतड़ी के राजा भोपाल सिंह ने बनवाया।

10. Answer B

Solution

Cenotaph of Rana Sanga – Mandalgarh (Bhilwara):

An eight-pillared cenotaph has been built for Rana Sanga.

Mandalgarh is known as the gateway to Mewar and is the site of the confluence of the Banas,

Bedach, and Menal rivers.

राणा सांगा की छतरी - माण्डलगढ़ (भीलवाड़ा):

8 खम्भों की छतरी बनी है राणा सांगा की।

माण्डलगढ़ - मेवाड़ का प्रवेश द्वार कहलाता है बनास, बेड़च, मेनाल का संगम।

11. Answer C

Solution

Udaipur – Bagore Ki Haveli:

Bagore Ki Haveli – Udaipur – Located at Gangaur Ghat on the banks of Lake Pichola.

Patwon Ki Haveli, Nathmal Ki Haveli, Salim Singh Ki Haveli – Jaisalmer

Phalodi – Lalchand Dhadha Ki Haveli

उदयपुर - बागोर की हवेली:

बागोर की हवेली - उदयपुर - पिछोला झील के किनारे गंगौरी घाट पर।

पटवों की हवेली, नथमल, सालिमसिंह – जैसलमेर

फलोदी - लालचंद ढड़ड़ा की हवेली

12. Answer A

Solution

Bundi: City of Stepwells and Water Reservoirs:

Famous Stepwells –

Raniji ki Baori (Rani Nathavati's Stepwell) – Built by Rani Nathavati in 1699.

Nagar-Sagar Kund – A pair of twin reservoirs.

Jaitsagar, Navalsagar, Anarkali ki Baori, Bhawaladi Baori, Cheel Gaadi Baori, etc.

Bundi is also known as "Chhoti Kashi" (Little Kashi) due to its stepwells and temples.

बूँदी कुंडो और बावड़ियों का शहर / City of Stepwells:

प्रसिद्ध बावड़ियाँ –

रानीजी की बावड़ी (रानी नाथावती की बावड़ी) - 1699 में रानी नाथावती ने बनवाई

नागर-सागर कुंड - 2 कुंड एक साथ।

जैतसागर, नवलसागर, अनारकली की बावड़ी, भवालदी बावड़ी, चील गाड़ी बावड़ी आदि।

बूँदी को "छोटी काशी" भी कहते हैं बावड़ियों + मंदिरों के कारण।

13. Answer B

Solution

Falna (Pali) – A major hub for the umbrella industry; also famous for its Jain temple (Golden Temple) and large iron/handmade umbrellas.

Major center for bow-and-arrow making – Banswara, Dungarpur, and Bori village (Banswara) – tribal regions.

Ramkada industry – Galiyakot (Dungarpur).

Ramkada = Toys and idols made from soapstone (ghiya patthar).

Talwara (Banswara) – Black marble idols; black stone quarries are located here.

फालना (पाली) - छाता उद्योग का मुख्य केन्द्र।

फालना जैन मंदिर के लिए भी प्रसिद्ध स्वर्ण मंदिर और छाता लोहे के बड़े छाते / हस्तनिर्मित।

तीर- कमान का मुख्य केन्द्र - बांसवाड़ा, डूंगरपुर और बोरी ग्राम (बांसवाड़ा) आदिवासी क्षेत्र।

रमकड़ा उद्योग - गलियाकोट (डूंगरपुर)

रमकड़ा = सोप स्टोन / घीया पत्थर से खिलौने, मूर्तियाँ।

तलवाड़ा (बांसवाड़ा) - काले संगमरमर की मूर्तियाँ, काला पत्थर खदान यहीं।

14. Answer A

Solution

Jatt Pattiyan – Woolen strips/rugs from Barmer, Balotra, and Jaisalmer:

Jatt Pattiyan are rugs or strips made from camel hair by Jat and Muslim weavers in the Barmer and Jaisalmer regions.

Varieties: Jirohi, Bhankla, Gadha, Chakki, Jaribhant, Dharidar (striped), and Morkha are all types of Jatt Pattiyan.

Characteristics: Jirohi features fine designs, Bhankla is thick, and Gadha is dark-colored.

Uses: Used for decorating camel backs and as floor coverings in homes.

जट्ट पट्टियाँ - बाड़मेर, बालोतरा, जैसलमेर की ऊनी पट्टियाँ:

जट्ट पट्टियाँ ऊँट के बालों से बनी दरियाँ / पट्टियाँ बाड़मेर-जैसलमेर के जाट / मुस्लिम बुनकर बनाते हैं।

प्रकार जिरौही, भांकला, गड़हा, चक्की, जरीभांत, धारीदार, मोरखा ये सब जट्ट पट्टियों के ही प्रकार हैं।

जिरौही महीन डिजाइन वाली, भांकला मोटी, गड़हा गहरे रंग की।

उपयोग ऊँट की पीठ पर सजावट, घर में बिछाने के लिए।

15. Answer A

Solution

Moriya Folk Song:

Who sings it – An unmarried girl who is betrothed.

When – A song of longing and anticipation sung in the period between the engagement and the wedding.

Sentiment – While waiting for her fiancé, the girl addresses the peacock (a symbol of the lover), singing "Moriya re mharo..."

मोरियो लोकगीतः

कौन गाती है - वह अविवाहित लड़की जिसकी सगाई (साख) हो चुकी है।

कब - सगाई के बाद, शादी से पहले के दिनों में विरह / इंतजार का गीत।

भाव - लड़की अपने मंगेतर के इंतजार में मोर (प्रेमी का प्रतीक) से बात करती है "मोरिया रे म्हारो..."

16. Answer D

Solution

The Langas are musicians from Western Rajasthan. They sing their songs in various ragas such as Kalyan, Jog, Paraf, Sindhi Bhairavi, Bilawal, Todi, Salang, Sorath, Desh, Maru, Pahadi, Suhab, Sameri, Birbhas, Gund Malhar (the most popular), and Manjh.

लंगा पश्चिमी राजस्थान के संगीतकार है। वे अपने गीत कल्याण, जोग, पाराफ, सिंधी भैरवी, बिलावल, तोड़ी, सालंग, सोरठ, देश, मरु, पहाड़ी, सुहाब, सामेरी, बीरभास, गुंड मल्हार (सबसे प्रचलित) और मांझ आदि रागों में गाते हैं।

17. Answer B

Solution

Atrauli Gharana – Sahab Khan:

Atrauli (Aligarh, UP); influenced by Rajasthan – performed at the courts of Bharatpur and Jaipur.

Rangila Gharana – Ramzan Ali:

Rangila Gharana – A renowned Gharana of Jodhpur.

Mewati Gharana – Ghagge Nazir Khan:

Mewati Gharana – Alwar, Bharatpur, and Mewat regions.

Jaipur Gharana – Bhupat Khan (Manrang):

Jaipur Gharana – A highly distinctive Gharana of Jaipur; originated from the Atrauli Gharana.

अतरौली घराना - साहब खाँ:

अतरौली (अलीगढ़, UP) पर राजस्थान में प्रभाव - भरतपुर, जयपुर दरबार में गाते थे।

रंगीला घराना - रमजान अली:

रंगीला घराना - जोधपुर का प्रसिद्ध घराना।

मेवाती घराना - घग्गे नजीर खाँ:

मेवाती घराना - अलवर, भरतपुर, मेवात क्षेत्र।

जयपुर घराना - भूपत खाँ (मनरंग):

जयपुर घराना - जयपुर का अतिविरल / अतरौली से निकला।

18. Answer C

Solution

The Morchang has no strings—only a single iron tongue or reed.

Instruments with 27 strings include the Ravanahatha, Saranga, and Surinda.

The 27-string instrument is the Ravanahatha (Rajasthan's oldest instrument).

Additional instrument classification:

Tat (Chordophones/String instruments) – Sarangi, Ravanahatha, Ektara, Dotara, Bhapang, Jantar.

Sushir (Aerophones/Wind instruments) – Flute (Bansuri), Algoza, Morchang, Shehnai, Pungi, Mashak.

Avanaddh (Membranophones/Percussion with skin) – Dhol, Dholak, Nagada, Mridang, Khanjari.

Ghan (Idiophones/Solid percussion) – Manjira, Jhanjh, Thali, Khartal, Ghunghru.

मोरचंग में कोई तार नहीं होता - केवल 1 लोहे की पत्ती/जीभ होती है।

27 तार वाला वाद्य - रावणहत्था / सरंगा / सुरिंदा में होते हैं

27 तार वाला = रावणहत्था (राजस्थान का सबसे प्राचीन वाद्य)।

Extra वाद्य वर्गीकरण -

तत् - तार वाले - सारंगी, रावणहत्था, इकतारा, दोतारा, भपंग, जन्तर।

सुषिर - फूक से - बांसुरी, अलगोजा, मोरचंग, शहनाई, पंगी, मशक।

अवनद्ध - चमड़े से मढ़े - ढोल, ढोलक, नगाड़ा, मृदंग, खंजरी।

घन - धातु से - मंजीरा, झांझ, थाली, खड़ताल, घुंघरू।

19. Answer C

Solution

Phad Dance / Phad Singing – Associated with the Bhopa-Bhopi community (e.g., the Phads of Pabuji and Devnarayanji).

The Bhopa narrates the Phad, while the Bhopi dances throughout the night.

Kalbelia Dance – Includes dances like Indoni, Panihari, Shankariya, and Bagadiya; Gulabo is a renowned performer.

फड़ नृत्य / फड़ गायन - भोपा-भोपी जाति से संबंधित है पाबूजी की फड़, देवनारायणजी की फड़।

भोपा - फड़ को बांचता है, भोपी - नाचती है रात भर।

कालबेलिया नृत्य - इण्डोणी, पणिहारी, शंकरिया, बागड़िया गुलाबो प्रसिद्ध।

20. Answer B

Solution

The Ali Bakhshi Khyal is prevalent in Mundawar, located in the Bhartrihari Nagar (formerly Alwar) district. Ali Bakhshi was the pioneer of this style. Prominent Khyals include Nihalde and Krishna-Lila.

अली बक्षी ख्याल भर्तृहरि नगर (पूर्व अलवर) जिले के मुण्डावर में प्रचलित है। इस शैली के प्रवर्तक अली बक्षीजी थे। प्रमुख ख्याल-निहालदे, कृष्णलीला।

21. Answer B

Solution

Saint Mavji – Founder of the Nishkalanki Sect:

Birth: 1771, Sabla village (Dungarpur); born into a Brahmin family.

Sect: Nishkalanki (worship of the Nishkalank—spotless/flawless—incarnation); followers revere the Nishkalanki (Kalki) avatar of Lord Vishnu.

Main Seat: Beneshwar Dham (at the confluence of the Mahi, Som, and Jakham rivers; bordering Dungarpur, Banswara, and Udaipur).

Scripture: Chopda (also known as Saam Sagar or Mavji ki Vani).

संत माव जी - निष्कलंकी सम्प्रदाय के प्रवर्तक:

जन्म - 1771 साबला गाँव (डूंगरपुर) ब्राह्मण परिवार।

सम्प्रदाय - निष्कलंकी (निष्कलंक अवतार की पूजा) भगवान विष्णु के निष्कलंकी (कल्कि) अवतार को मानते हैं।

मुख्य पीठ - बेणेश्वर धाम (डूंगरपुर-बांसवाड़ा-उदयपुर संगम) माही-सोम-जाखम संगम।

ग्रंथ - चोपड़ा (साम सागर, माव जी की वाणी)

22. Answer B

Solution

Hamiduddin Nagauri – A renowned Sufi saint of the Chishti order, known as "Sultan-ut-Tarkin" (Sultan of Ascetics).

Guru – A disciple of Khwaja Moinuddin Chishti.

Residence – Locals refer to his home/khanqah in Nagaur as "Phool Mahal" (Flower Palace) because it was always fragrant with flowers; he led a simple life.

हमीदुद्दीन नागौरी - चिश्ती सम्प्रदाय के प्रसिद्ध सूफी संत "सुल्तान-उत-तारकीन" (त्यागियों के सुल्तान) कहलाते हैं।

गुरु - ख्वाजा मोइनुद्दीन चिश्ती के शिष्य।

निवास - नागौर में इनके घर / खानकाह को स्थानीय लोग "फूल महल" कहते हैं क्योंकि हमेशा फूलों से महकता / सादा जीवन।

23. Answer B

Solution

Gogaji – Dadreva (Churu) – Gogaji Chauhan; born 946 AD at Dadreva (Churu); son of Jevar Singh Chauhan and mother Bachhal.

Pabuji – Kolu/Kosu (Phalodi) – Pabuji Rathore; born 1239 AD at Kolu/Kosu village (Phalodi, Jodhpur); father Dhandhalji Rathore.

Harbuji – Bhundel (Nagaur) – Harbuji Sankhla; born in the 14th century at Bhundel (Nagaur); son of Mehaji Sankhla; a contemporary/disciple of Pabuji.

Tejaji – Kharnal (Nagaur) – 1073

Mallinathji – Tilwara (Barmer) – 1358

Fattaji – Santhu (Jaisalmer)

गोगाजी - ददरेवा (चूरू) - गोगाजी चौहान जन्म 946 ई. ददरेवा (चूरू) जेवरसिंह चौहान के पुत्र माता बाछल।

पाबूजी - कोलू / कोसू (फलोदी) पाबूजी राठौड़ जन्म 1239 ई. कोलू / कोसू गाँव (फलोदी, जोधपुर) पिता धांधलजी राठौड़।

हड़बूजी - भुंडेल (नागौर) हड़बूजी सांखला जन्म 14वीं सदी भुंडेल (नागौर) मेहाजी सांखला के पुत्र पाबूजी के समकालीन / शिष्य जैसे।

तेजाजी - खड़नाल (नागौर) - 1073

मल्लीनाथजी - तिलवाड़ा (बाड़मेर) - 1358

फत्ताजी - सांथू (जैसलमेर)

24. Answer B

Solution

Aamaj Mata Temple:

Location: Situated in the Aravalli range near Kelwara (Kumbhalgarh Tehsil) and Aamaj/Amet in Rajsamand district.

Significance: Revered as the clan deity (Kuldevi) of the Bhil and Garasia tribal communities; holds great significance among the Bhil people.

Name: Named 'Aamaj Mata' because the deity is believed to have manifested beneath a mango (Aam) tree.

Fair: A large number of tribal people gather here during the Navratri festival in the bright fortnight (Shukla Paksha) of the Bhadrapad month.

आमज माता मंदिर:

स्थान - राजसमंद जिला आमज / आमेट के पास केलवाड़ा तहसील कुम्भलगढ़ रेंज के पास अरावली में।

मान्यता - भील-गरासिया आदिवासियों की कुलदेवी भीलों में बहुत मान्यता।

नाम - आमज माता "आम" के वृक्ष के नीचे प्रकट हुई इसलिए आमज।

मेला - भाद्रपद शुक्ल पक्ष नवरात्रि में आदिवासी बड़ी संख्या में आते हैं।

25. Answer A

Solution

Chunri Gangaur (Chaitra Shukla Panchami) – Dhulandi Gangaur – Worship of Goddess Parvati on Chaitra Shukla Tiritiya (famous in Jaipur).

Chunri Gangaur – On Chaitra Shukla Panchami in Nathdwara, married women drape a special 'Chunri' (veil) over the Gangaur idol.

Dhinga Gangaur – Vaishakh Krishna Tiritiya (Jodhpur).

चूनड़ी गणगौर चैत्र शुक्ल पंचमी -

धुलंडी गणगौर - चैत्र शुक्ल तृतीया को पार्वती जी का पूजन जयपुर की प्रसिद्ध।

चुनड़ी गणगौर - चैत्र शुक्ल पंचमी को नाथद्वारा में विशेष "चुनड़ी" गणगौर को चुनरी ओढ़ाना सुहागिनें।

धींगा गणगौर - वैशाख कृष्ण तृतीया (जोधपुर)

26. Answer B

Solution

The Pushkar Fair (Ajmer) is Rajasthan's most famous and vibrant fair—often referred to as the 'Kumbh Mela of Merwara'. A massive fair is organized in Pushkar from Ekadashi to Purnima during the month of Kartik (October–November). It is arguably the largest cattle fair in the state.

राजस्थान का सबसे प्रसिद्ध/रंगीन/मेरवाड़ा का कुंभ मेला, पुष्कर मेला (अजमेर) है। पुष्कर में कार्तिक (अक्टूबर-नवम्बर) मास की एकादशी से पूर्णिमा तक विशाल मेले का आयोजन किया जाता है। सम्भवतः यह राज्य का सबसे बड़ा पशु मेला है।

27. Answer D

Solution

Elephant Festival – Jaipur

Venue – Jaipur Chaugan Stadium / Amer (organized by the Department of Tourism).

Timing – Phalguna Purnima (day of Holi) and Dhulandi (in March).

Events – Elephant decoration competition, elephant polo, elephant race, and Holi celebrations.

Historical Context – Royal elephant processions of the Kachwaha kings of Jaipur.

हाथी महोत्सव - जयपुर

स्थान - जयपुर चौगान स्टेडियम / अमेर पर्यटन विभाग द्वारा।

समय - फाल्गुन पूर्णिमा (होली के दिन) धुलंडी के दिन मार्च में।

हाथियों की सजावट प्रतियोगिता, हाथी पोलो, हाथी दौड़, होली।

जयपुर के कछवाहा राजाओं ने हाथी राजसी सवारी।

28. Answer C

Solution

Donkey Fair: The Khalkani Mata Donkey Fair, held at Bhavgarh Bandhya in the Luniyawas Gram Panchayat of Jaipur, is renowned. This fair takes place during the festival of Dussehra, spanning from the seventh day of the dark fortnight of the month of Asoj (Asoj Badi Saptami) to the eleventh day (Gyaras). It is said that the fair was initiated 500 years ago by the Kachwaha clan to celebrate their victory over Chandra Meena in battle.

गधों का मेला : जयपुर के लूणियावास ग्राम पंचायत का भावगढ़ बंध्या में खलकाणी माता गर्दभमेले के लिए विख्यात है। यह मेला दशहरे पर आसोज बदी सप्तमी से ग्यारस तक लगता है। कहा जाता है कि मेले की शुरुआत 500 वर्ष पहले कछवाहों ने चन्द्रा मीणा को युद्ध में हराने की खुशी में की थी।

29. Answer D

Solution

Lahariya – Shravan

Mothda – Weddings

Chunri / Phool-Patti / Madil – Holi and Diwali

Saffron turban – War / Victory

White turban – Mourning

Panchrangi (Five-colored) – Festivals

Mysore turban – Famous 'Maisuriya Kota' style

लहरिया - श्रावण

मोठड़ा - विवाह

चुनरी / फूल-पत्ती / मदील - होली-दीवाली

केसरिया पगड़ी - युद्ध / विजय पर

सफेद पगड़ी - शोक पर

पंचरंगी - उत्सव पर

मैसूर की पगड़ी - मैसूरिया कोटा की प्रसिद्ध

30. Answer A

Solution

Wood used in wedding rituals –

Mugdhana –

The wood used for cooking meals following the installation of Vinayak Ji (Lord Ganesha) is known as Mugdhana.

Mugdhana wood – Mango wood is considered auspicious.

Vinayak Sthapana – Worship of Lord Ganesha performed after the Lagna Patrika (auspicious wedding schedule/invitation).

विवाह के रीति-रिवाजों की लकड़ियाँ –

मुगधना –

विनायक जी (गणेश जी) की स्थापना के बाद - जो लकड़ियाँ भोजन बनाने के काम में ली जाती हैं उन्हें मुगधना कहते हैं।

मुगधना की लकड़ियाँ - आम की लकड़ियाँ शुभ मानी जाती हैं।

विनायक स्थापना - लग्न पत्रिका के बाद गणपति पूजन।

31. Answer D

Solution

Mokdi –

Mokdi is an arm ornament—similar to an bajuband (armlet)—worn on the upper arm.

It is worn by women and is made of lac, gold, or silver.

In some regions, it is considered a variation of the kada (bracelet/bangle) or bajuband.

मोकड़ी -

मोकड़ी = हाथ का आभूषण है - बाजूबंद जैसा - भुजा पर पहना जाता है।

महिलाओं द्वारा पहना जाता है - लाख / सोने-चाँदी का।

कुछ जगह इसे कड़ा / बाजूबंद का ही रूप मानते हैं।

32. Answer C

Solution

The Kanjar tribe, a prominent nomadic tribe of Rajasthan, was traditionally known for theft and hunting.

Habitat – Hadoti region (Kota, Bundi, Baran, Jhalawar), Bhilwara, Udaipur, Ajmer

Primary occupation – Crime

In the Kanjar tribe, the head of the family is known as 'Patel'.

कंजर जनजाति राजस्थान की एक प्रमुख घुमंतू जनजाति चोरी-शिकार करने वाली मानी जाती थी।

निवास - हाड़ौती क्षेत्र (कोटा, बूंदी, बारां, झालावाड़), भीलवाड़ा उदयपुर अजमेर

मुख्य व्यवसाय – अपराध

कंजर जनजाति में परिवार के प्रमुख को 'पटेल' कहा जाता है

33. Answer B

Solution

An earthen vessel used for churning curd is known as a bilauvna. In rural households that own milch animals, women churn the curd—placed in these earthen vessels—using a jherna (churning rod) attached to a netra (rope); by vigorously rotating the rod, they extract aloona or chuntiyan (fresh butter). To keep the churning rod upright, it is secured between two sankals (semi-circular iron hooks). The vessel used to store this fresh butter is called a gheeldi.

दही बिलौने के लिए मिट्टी का पात्र बिलौवणा कहलाता है। ग्राम्य जीवन के जिन परिवारों में 'धीणा' (दुधारू पशु) हैं, वहाँ मिट्टी से निर्मित बिलौवणों में दही डालकर नेतिये या नेतरा (रस्सी) से बँधे झेरणे (रई) से महिलाएँ घमड़का लगाकर दही से अलूणा या चूंटियाँ (मक्खन) निकालती हैं। रई को सीधी रखने के लिए दो सांकलों (लोहे के अर्द्ध चन्द्राकार कुन्दों) में फँसा देते हैं। जिस पात्र में अलूणा रखते हैं उसे घीलड़ी कहते हैं।

34. Answer C

Solution

Khuman Raso – Written in the Pingal language by Dalpat Vijay, this text chronicles the Guhila dynasty kings of Mewar, ranging from Bappa Rawal to Raj Singh.

खुमाण रासो-दलपत विजय द्वारा पिंगल भाषा में लिखित इस ग्रंथ में बप्पारावल से लेकर राजसिंह तक मेवाड़ के गुहिलवंशीय राजाओं का वर्णन किया गया है।

35. Answer B

Solution

Shivdas Gadan: A writer belonging to the Charan community, he authored the renowned work titled 'Achaldas Khinchi ri Vachanika'. This Champu poem (a composition blending prose and verse), imbued with the sentiment of heroism, describes the battle (1423 CE) between King Achaldas Khinchi of Gagron Fort and Sultan Hoshang Gauri of Mandu.

शिवदास गाडण : चारण जाति के इस लेखक ने 'अचलदास खींची री वचनिका' नामक प्रसिद्ध ग्रंथ की रचना की। वीर रसात्मक इस चम्पू काव्य (गद्य-पद्य मिश्रित) में गागरोणगढ़ के खींची राजा अचलदास और माण्डू बादशाह हुशंगगौरी के युद्ध (1423 ई.) का वर्णन है।

36. Answer B

Solution

The Balaji Circuit specifically connects Mehandipur, Salasar, Pandupol, and Samod.

The Krishna Circuit includes Govind Dev Ji (Jaipur), Shrinathji (Nathdwara), and Khatu Shyam Ji.

बालाजी सर्किट विशेष रूप से मेहंदीपुर, सालासर, पांडुपोल, सामोद को जोड़ता है।

कृष्ण सर्किट गोविंद देव जी (जयपुर), श्रीनाथजी (नाथद्वारा), खाटू श्याम जी।

37. Answer C

Solution

Merwara Circuit – Ajmer, Pushkar, Nagaur, Merta
Dhundhar Circuit – Jaipur, Amer, Tonk, Abhaneri (Dausa)

मेरवाड़ा सर्किट – अजमेर, पुष्कर, नागौर, मेड़ता

ढूंढाड़ सर्किट – जयपुर, आमेर, टोंक, आभानेरी (दौसा)

38. Answer D

Solution

Borunda (Jodhpur) is home to Rupayan Sansthan, an institution established in 1960 for the preservation of folk arts; it was founded by Komal Kothari and Vijaydan Detha.

बोरुन्दा (जोधपुर) लोककलाओं के संरक्षण हेतु स्थापित (1960 में) रूपायन संस्था स्थित है, जिसकी स्थापना कोमल कोठारी और विजयदान देथा ने की थी।

39. Answer B

Solution

Marwari ranks first in terms of both the number of speakers and geographical coverage. It is also mentioned among the major languages of India in the Ain-i-Akbari, authored by Abul Fazl in the 17th century.

बोलने वालों व क्षेत्रफल की दृष्टि से मारवाड़ी भाषा का प्रथम स्थान है। 17वीं शताब्दी में अबुल फजल द्वारा रचित 'आइने अकबरी' में भारत की प्रमुख भाषाओं में मारवाड़ी भाषा का भी उल्लेख किया गया है।

40. Answer A

Solution

Dasotan (also known as Dasthaun or Daston) is a ritual observed on the tenth day after a child's birth; it marks the end of the sutak (ritual impurity) period, involves the mother and child bathing, and includes the naming ceremony.

दसोटण/दछौन/दास्तोन बच्चे के जन्म के बाद दसवें दिन मनाया जाने वाला संस्कार है जिसमें सूतक खत्म होने के बाद माँ और बच्चा स्नान करते हैं तथा नामकरण होता है।

41. Answer A

Solution:

In the construction of **flat arches**, a slight upward curvature (camber) is provided in the intrados to counteract the effect of settlement and to improve appearance.

The **usual allowance for this camber** is taken as **1/100 of the span**.

This is a standard value followed in building construction practices.

42. Answer B

Solution:

According to IS 4031 Part 5. The initial setting time test is conducted on cement by gauging the cement with 0.85 times the water required to give a paste of standard consistency.

43. Answer A

Solution:

An **arch** is a structural member designed to span an opening using **small wedge-shaped units** called **voussoirs**. These units fit together and support each other through compressive forces, transferring the load to the abutments or piers on either side.

44. Answer D

Solution:

Pozzolana has no cementing value itself but has property of combining with lime to produce a stable lime-pozzolana compound which has definite cementitious properties.

Free lime is thus removed and resistance to chemical attack increase. It has low heat evolution, used in places of mass concrete such as dams.

45. Answer C

Solution:

In the design of stairs, the following empirical relations are commonly used (when rise R and tread T are measured in centimetres):

- $2R + T = 60$
- $R \times T = 400 \text{ to } 450$
- $R + T = 40 \text{ to } 50$

Among the given options, the standard and most widely accepted relation is:

$$2R + T = 60$$

This ensures comfortable proportions between the rise and tread of a staircase.

46. Answer C

Solution

In OPC following are the proportion of oxides.

CaO	-	63%	62-67%
SiO ₂	-	20%	17-25%
Al ₂ O ₃	-	6.30%	3-8%
Fe ₂ O ₃	-	3.60%	3-4%
MgO	-	2.40%	1-3%

47. Answer C

Solution:

In a flight of stairs:

The number of risers is always one more than the number of **treads**.

This is because the topmost step ends at the landing (or floor level), which is not counted as a tread of that flight.

Relation:

Number of treads = Number of risers - 1
Hence, the correct option is (c).

48. Answer B

Solution:

In the down-draught kiln hot gases from burning fuel are deflected to the top of the kiln which must have a permanent roof. They then flow down between the bricks to warm and fire them and burn them uniformly. These kilns are either rectangular or circular in plan.

49. Answer D

Solution:

Parquet flooring consists of thin, already polished wooden pieces (usually 6-10 mm thick) arranged in geometric patterns (such as herringbone, basket weave, etc.).

- Option (a) refers to ceramic tile flooring.
- Option (b) refers to stone flooring (such as marble or kota stone).
- Option (c) refers to concrete flooring with red oxide finish.

Hence, the correct statement for parquet flooring is (d).

50. Answer C

Solution:

Alumina in brick earth provides plasticity for moulding, Silica preserves the form of brick at high temperature and prevents shrinkage, Magnesia imparts yellow tint to the brick lime prevents the raw brick from shrinkage, enables the silica to fuse during burning and binds the particles of brick together.

51. Answer A

Solution:

Single scaffolding (also called bricklayer's scaffolding) is the most common type used for brick masonry work.

- It consists of a single framework of standards, ledgers, putlogs, etc., supported directly on the ground.
- Putlogs are fixed into the holes left in the brick wall.

52. Answer A

Solution:

In **vertical shoring** (also called dead shoring):

- The **horizontal members** that pass through the wall (or support the wall) are called **Needles**.
- The **vertical members** that support the needles from the ground are called **Dead shores**.

Thus, the correct combination (horizontal + vertical) is **Needles and Dead shores**.

53. Answer D

Solution:

Mohs scale is used to determine hardness of stone.

54. Answer B

Solution:

On a floor plan, a dashed (hidden) line drawn approximately 24 inches outside the exterior walls commonly represents the **roof overhang** (or eaves line).

This indicates the extent of the roof projection beyond the exterior walls of the building.

- Sidewalks are usually shown differently and farther away.
- Plumbing drain lines are shown with different symbols (often inside the building or with specific line types).

Hence, the correct answer is **Roof overhang**.

55. Answer B

Solution:

- **Statement (I) is true:** A good building stone **should be well seasoned** before use. Freshly quarried stone contains "quarry sap" (moisture), which makes the stone soft, weak, and prone to splitting or decaying. Leaving the dressed stone to dry naturally for **6 to 12 months** removes this sap, making the stone significantly harder, sounder, and more durable.
- **Statement (II) is true:** The resistance of stone against wear and tear due to natural agencies **should be high**. This characteristic represents the **weathering resistance** or durability of the stone, ensuring it does not crumble easily when exposed to wind, rain, frost, and temperature changes.

56. Answer C

Solution:

As per **IS 3007 (Part-1)**, for Asbestos Cement (A.C.) sheet roofing:

- When the roof slope is **more than 20°**, the minimum **end lap** required is **150 mm**.
- When the slope is **less than or equal to 20°**, a larger end lap usually 200 mm or more is recommended.

Hence, the correct answer is **150 mm**.

57. Answer C

Solution:

Volume of wet cement mortar required for 1m³ of brick work is calculated as follows:

$$\text{Number of bricks} = \frac{1}{0.20 \times 0.1 \times 0.1} = 500 \text{ numbers}$$

$$\text{Hence volume of mortar} = 1 - 500 \times 0.19 \times 0.09 \times 0.09 = 0.2305 \text{ m}^3.$$

Adding additional 10% for wastage wet mortar total = 0.25 m³

Now 1m³ of wet = 1.25 m³ mortar of dry mortar
0.25m³ of wet = 0.3125 m³ of dry mortar.

Approximate proportion Dry mortar

$$= \frac{0.3125}{1} \times 100 = 31.25\%$$

58. Answer D

Solution:

In roof trusses, the **ridge line** is the horizontal line formed by joining all the highest points (apex points) of the successive roof trusses.

It represents the topmost edge of the pitched roof where the two sloping sides meet.

- Options (a) and (b) are incorrect descriptions.
- Hence, the correct definition is given in option (d).

59. Answer C

Solution:

For identical strength, a composite cement - lime mortar is preferred over cement mortar as composite cement-lime mortar has high workability, high water retentivity and low drying shrinkage.

60. Answer B

Solution:

The process of obtaining stones from natural rock beds (by methods such as excavating, wedging, heating, and blasting) is called **quarrying**.

- Dressing refers to the shaping/finishing of stones after extraction.
- Seasoning is the process of drying stones to remove moisture.
- Placing refers to setting the stones in position during construction.

61. Answer C

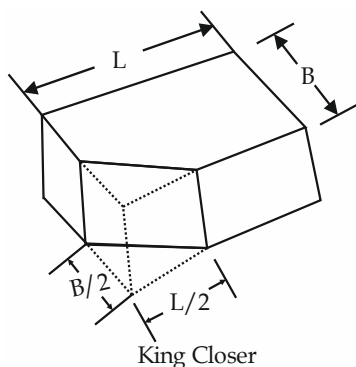
Solution:

Size of modular brick = 20 x 10 x 10 cm

$$\text{No. of bricks req.} = \frac{1}{0.20 \times 0.1 \times 0.1} = 500$$

62. Answer D

Solution



King closer is obtained by cutting the brick along the line joining the mid-points of the adjacent sides of a brick. The portion of brick which is left is known as king closer.

63. Answer B

Solution:

Specific gravity is the ratio of the density of a material to the density of water (at 4 °C). By definition, the specific gravity of water is **1**.

Approximate specific gravities of the other materials:

- Cement ≈ 3.15
- Glass ≈ 2.5
- Soil ≈ 2.6–2.7

Therefore, among the given options, **water** has the comparatively lowest specific gravity.

64. Answer C

Solution:

Masonry wall can be considered as fixed at base and free at the top, hence effective length should be 2.0 L

65. Answer B

Solution

Bricks are soaked in water before use so that they do not absorb water from the mortar. If dry bricks are used, they suck moisture from the mortar, which weakens the bond and reduces the strength of the masonry.

66. Answer A

Solution:

The strength of timber is maximum when load applied is parallel to grain and it is minimum when load applied is perpendicular to grain.

67. Answer A

Solution:

As per BIS (IS 1077), Class 7.5 bricks are designated to have a minimum average compressive strength of **7.5 N/mm²**.

Class	Average Compressive Strength Not less than (N/mm ²)
35	35.0
30	30.0
25	25.0
20	20.0
17.5	17.5
15	15.0
12.5	12.5
10	10.0
7.5	7.5
5	5.0
3.5	3.5

68. **Answer C**

Solution:

Deciduous trees are hardwood trees and are broad leaved trees. Coniferous trees have needle shaped leaves & grow in temperate region & in high altitudes.

69. **Answer B**

Solution:

Plaster of Paris is chemically **calcium sulfate hemihydrate**, commonly represented as **CaSO₄·½H₂O**.

70. **Answer D**

Solution:

Kiln Seasoning of timber reduces the density of timber. It increases the life of timber as it becomes less liable to attack by insects and fungus and it provides dimensional stability to the timber.

71. **Answer B**

Solution:

Calcium oxide, commonly known as quicklime or burnt lime, is a widely used chemical compound.

It is a white, caustic, alkaline, crystalline solid at room temperature.

Calcium oxide is usually made by the thermal decomposition of materials, such as limestone or seashells, that contain calcium carbonate in a lime kiln.

This is accomplished by heating the material to about 800 °C, a process called **calcination or lime-burning, to liberate a molecule of carbon dioxide (CO₂), leaving quicklime.**

72. **Answer C**

Solution:

Cement can be manufactured by both the **dry process** and the **wet process**.

- In the **dry process**, the raw materials are crushed, ground and mixed in dry form before being fed into the kiln.
- In the **wet process**, the raw materials are ground with water to form a slurry before being fed into the kiln.

Both methods are used in the industry (dry process is more common today due to lower energy consumption).

73. **Answer D**

Solution:

The specific gravity of wood is less than 1 and is dependent upon the type of species.

74. **Answer C**

Solution:

Rapid Hardening Cement (RHC) is prepared by increasing the percentage of **Tricalcium silicate (C₃S)** and grinding the cement more finely.

C₃S is responsible for early strength development. Higher C₃S content allows the cement to gain strength rapidly (usually within 3 days instead of 7 days for ordinary Portland cement).

75. **Answer B**

Solution:

As per the relevant Indian Standards:

- **33 grade** (IS 269:1989) → minimum 28-day compressive strength = **33 MPa**
- **43 grade** (IS 8112:1989) → minimum 28-day compressive strength = **43 MPa**
- **53 grade** (IS 12269:1987) → minimum 28-day compressive strength = **53 MPa**

These values represent the mean (average) compressive strength requirements after 28 days.

76. **Answer A**

Solution:

As per standard civil engineering references (Building Materials by Rangwala / IS codes related values), the **modulus of elasticity of timber** is generally taken as:

0.5 to 1.0 × 10⁴ N/mm²

77. **Answer D**

Solution:

Fiber Saturation Point (FSP) is the stage in the drying of timber when:

- All free water from the cell cavities has been removed,
- But the cell walls are still fully saturated with bound water.

Below this point, further drying causes the cell walls to lose moisture, leading to shrinkage.

So the correct option is **(d)**.

78. **Answer B**

Solution:

Wet Rot is a defect in timber caused by fungi. It occurs when timber remains in a damp or wet condition for a long time, leading to fungal attack that softens and weakens the wood.

- **Diagonal Grain** → defect due to improper sawing or natural growth
- **Wane** → presence of original rounded surface of the tree on the edge of timber
- **Chip Mark** → defect due to improper machining/tools

Only **Wet Rot** is caused by fungi.

79. **Answer D**

Solution:

Updating is the process of reviewing the actual progress of a project, incorporating any changes (delays, variations, new information, etc.), and then rescheduling or replanning the remaining activities accordingly.

Other options:

- **Resource allocation:** Assigning resources to activities.
- **Resource smoothing:** Adjusting activities within float to reduce peaks in resource demand without changing project duration.
- **Resource levelling:** Resolving resource conflicts by delaying activities (may increase project duration).

Thus, the correct term is **Updating**.

80. **Answer C**

Solution:

In the context of paints, **PVC** stands for **Pigment Volume Concentration**.

It is the ratio of the volume of pigment to the total volume of non-volatile constituents (pigment + binder) in the paint, expressed as a percentage. It is an important parameter that affects the properties of the paint film.

81. **Answer D**

Solution:

Insulating glass (also called double glazing or insulated glass unit) is used in windows to prevent heat loss.

It consists of two or more glass panes separated by an air or gas-filled space, which acts as a thermal barrier and significantly reduces heat transfer.

82. **Answer C**

Solution:

- **Statement 1 is false:** When you insert your hand into a bag of cement, it should give a **cool** feeling (not hot). A hot feeling indicates that the cement has already started setting due to moisture absorption.
- **Statement 2 is true:** In the adulteration (purity) test, a pinch of cement is rubbed between the fingers. Good quality cement feels **smooth**, while the presence of grit indicates adulteration with sand or other impurities.

83. **Answer A**

Solution:

- **Statement 1 is correct:** Quick lime (CaO) is obtained by the calcination (burning) of comparatively pure limestone (CaCO_3) at high temperature.
- **Statement 2 is incorrect:** The lime that sets under water is known as **hydraulic lime**, not fat lime.
Fat lime (pure lime) sets only in the presence of air (by absorbing CO_2) and does not set under water.

84. Answer A

Solution:

- **Statement I is correct:** Specific surface (fineness) of cement is determined by the **air permeability method** (Blaine's air permeability apparatus) as per IS 4031.
- **Statement II is correct:** **Le Chatelier's method** is used to determine the soundness of cement (to check expansion due to free lime).
- **Statement III is Incorrect:** As per IS 269 : 2015 specifications, the total **insoluble residue** in ordinary Portland cement should not be more than **5%**.

85. Answer D

Solution:

Scheduling involves determining the sequence, timing, and duration of project activities.

Its main purpose is to ensure that the project is executed in a systematic, orderly, and effective manner by:

- Avoiding conflicts in resource allocation
- Maintaining proper sequence of activities
- Meeting the planned timelines

While scheduling is related to planning, financial control, and estimation, its direct contribution is towards **orderly and effective execution** of the project.

Thus, the correct option is **(d)**.

86. Answer A

Solution:

Correct objectives of seasoning of wood are:

1. Reduce shrinkage and warping after placement in the structure → **Correct**
2. Increase strength, durability and workability → **Correct**

Incorrect objectives are:

3. Increase its weight → **Incorrect** (Seasoning **decreases** the weight by removing moisture)
4. Make it difficult to paint → **Incorrect** (Seasoning makes the wood easier to paint and work with)

Therefore, the incorrect objectives are **3 and 4**.

87. Answer B

Solution:

- **S1 is False:** Kiln seasoning is a **fast** process of seasoning timber (takes only a few days to weeks), unlike natural/air seasoning which is slow.
- **S2 is True:** In kiln seasoning, if proper humidifying arrangement is not provided, the timber can develop defects like cracking, splitting, and case hardening (especially in refractory/hard-to-season timbers). Proper control of humidity is essential.

88. Answer D

Solution:

Vicat's apparatus is used to determine:

- **Normal consistency** of cement
- **Initial setting time** of cement
- **Final setting time** of cement

It is **not** used for determining fineness of cement (fineness is determined by sieve analysis or Blaine's air permeability method).

Hence, the correct option is **(d)**

89. Answer D

Solution:

Crashing means reducing the project duration by employing additional resources (overtime, extra labour, more equipment, etc.).

Effects of crashing:

- **Direct cost increases** (because of extra resources and higher resource rates). → Statement **4** is correct.
- **Indirect cost decreases** (because overheads, supervision, and time-dependent costs reduce with shorter project duration). → Statement **2** is correct.

Statements 1 and 3 are incorrect.

Thus, the correct statements are **2 and 4**.

90. Answer D

Solution:

- **Statement A is correct:** Efflorescence is the appearance of a white powdery deposit on the surface of bricks due to soluble salts.
- **Statement B is incorrect:** Efflorescence is mainly caused by the presence of soluble salts (like sulphates of calcium, magnesium, sodium, potassium) in the brick earth or water used, **not** specifically by chalk.
- **Statement C is correct:** As per classification:
 - Slight → < 10% area
 - Moderate → up to 50% area
 - Heavy → > 50% area
 - Serious → salts are powdery and come off the surface
- **Statement D is incorrect:** Covering less than 10% area is classified as **slight** efflorescence, not moderate.

Hence, the correct statements are **A and C**.

91. Answer D

Solution

Free float = EST of successor – EFT of the activity.

- **Total float** = Latest allowable time – Earliest possible time (available time – duration).
- **Independent float** = Excess time available when both preceding and succeeding activities are at their extreme times.
- **Interfering float** = Total float – Free float.

Thus the correct matching is **A-2, B-1, C-4, D-3**, which is option (d).

92. Answer D

Solution:

All three are considered building materials:

- **Concrete** → Widely used construction material
- **Bricks** → Primary building material for masonry
- **Clay** → Used as a building material (for making bricks, tiles, mud walls, flooring, etc.) and is classified under building materials

Hence, the correct option is (d).

93. Answer A

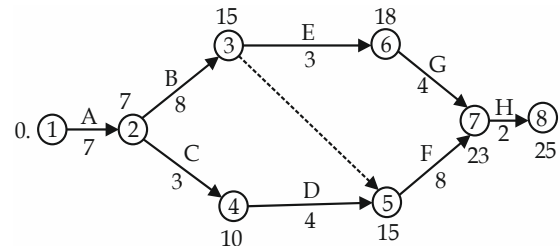
Solution:

- **Pumice** → Igneous rock (extrusive/volcanic, light and porous)
- **Shale** → Sedimentary rock
- **Slate** → Metamorphic rock (formed from shale)

Only **Pumice** is an example of an igneous rock.

94. Answer C

Solution:



Critical Path 1 - 2 - 3 - 5 - 7 - 8

95. Answer B

Solution:

Matching:

- **P. Water seasoning** → 3
Logs are kept immersed in a running stream of water (bigger end pointing upstream) and later dried in air.
- **Q. Air seasoning** → 4
Logs/sawn timber are stacked in a covered shed in cross-wise alternate layers for free air circulation.
- **R. Kiln seasoning** → 1
Controlled heating and humidifying of drying air with proper circulation over the stacked timber.
- **S. Electric seasoning** → 2
Electric current is passed through electrodes at the ends of timber, generating heat inside and drying it.

96. Answer B

Solution:

- **Free float** is the amount of time by which the completion of an activity can be delayed **without affecting the early start** of any of its succeeding activities.

Other options:

- **Total float:** Time by which an activity can be delayed without delaying the **project completion**.

- **Independent float:** Float available without affecting either preceding or succeeding activities.
- **Interfering float:** Difference between total float and free float (the portion of total float that interferes with succeeding activities).

Thus, the correct answer is **Free float**.

97. Answer D

Solution:

Matching:

- **1. Glass → C**
Obtained by melting a mixture of pure sand, soda and chalk at high temperature.
- **2. Plastic → A**
An organic material prepared from resin with or without fillers/plasticizers/solvents.
- **3. Gypsum → D**
A white crystalline substance which is hydrated sulphate of calcium ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$).
- **4. Asbestos → B**
A fibrous mineral substance composed of hydrous silicate of calcium and magnesium.

98. Answer D

Solution:

Matching:

- 1. Base → C. White lead**
The base is the solid substance that forms the body (main bulk) of the paint. It provides opacity, hardness, and helps prevent shrinkage cracks. White lead is a common example of a base.
- 2. Vehicle → A. Linseed oil**
The vehicle (also called the medium or binder) is the liquid component that carries the pigment, helps spread the paint, and forms a protective film on drying. Linseed oil is the most common vehicle used in oil paints.
- 3. Pigment → B. Lithophone**
Pigments give colour, opacity (hiding power), and aesthetic appeal to the paint. Lithophone (a mixture of zinc sulphide and barium sulphate) is an example of a pigment (commonly used as a white pigment).

4. Drier → D. Litharge

Driers (or drying agents) accelerate the drying and hardening process of the paint by helping the vehicle absorb oxygen. Litharge (lead monoxide, PbO) is a common example of a drier.

99. Answer C

Solution:

- **Assertion (A) is correct.**
Critical activities lie on the critical path and have **zero total float**. Any delay in a critical activity directly delays the project completion time.
- **Reason (R) is incorrect.**
The float of a critical activity is **zero** (not negative).
 - Zero float → Critical activity
 - Positive float → Non-critical activity
 - Negative float → Indicates that the activity/project is already delayed or that schedule constraints cannot be met.

Conclusion:

A is true and R is false.

100. Answer D

Solution:

- **A. Granite → 2. Ballast**
Granite is a hard, durable igneous rock. Crushed granite is commonly used as railway ballast (and also as road metal or concrete aggregate).
- **B. Marble → 1. Ornamental work**
Marble is a metamorphic rock that takes a fine polish and is available in attractive colours. It is widely used for ornamental work, carving, flooring, facing, and decorative purposes.
- **C. Chalk → 4. Manufacture of cement**
Chalk is a pure form of limestone (soft, white, and easily powdered). It is used in the manufacture of Portland cement (and also as a colouring material in cement).
- **D. Laterite → 3. Rough stone work**
Laterite is a soft, porous stone that hardens on exposure. It is commonly used for rough stone masonry work (and also as road metal in some cases).

This combination matches option (d).

101. Answer D

Solution :

- **Assertion (A) is incorrect.**

PERT is a **probabilistic** technique used when activity durations are **uncertain** (not known with certainty).

When activity durations are known with certainty, **CPM** (Critical Path Method) is used.

- **Reason (R) is correct.**

In PERT, three time estimates are used for each activity:

- Optimistic time (t_o)
- Most likely time (t_m)
- Pessimistic time (t_p)

These are combined to calculate the **expected time**:

$$t_e = \frac{t_o + 4t_m + t_p}{6}$$

Conclusion:

A is false and R is true. (R does not explain A because A itself is wrong.)

102. Answer C

Solution:

- **A. Quick lime → 2.**

Quick lime (also called caustic lime or burnt lime) is the product obtained after the calcination (heating) of limestone. It is essentially calcium oxide (CaO).

- **B. Fat lime → 1.**

Fat lime (also called pure lime, rich lime, or high-calcium lime) has a high calcium oxide content (typically $\geq 95\%$). It sets and hardens by absorbing carbon dioxide (CO_2) from the atmosphere (carbonation).

- **C. Hydrated lime → 4.**

Hydrated lime (also called slaked lime) is obtained by carefully adding (sprinkling) a limited amount of water to quick lime. This converts CaO into calcium hydroxide, $\text{Ca}(\text{OH})_2$, in the form of a fine dry powder.

- **D. Hydraulic lime → 3.**

Hydraulic lime contains small quantities of clayey impurities (silica, alumina, and iron oxide) in chemical combination with calcium

oxide. These impurities enable it to set and harden even under water (or in damp conditions).

This combination matches option (c).

103. Answer B

Solution:

The question asks which pairing is **incorrectly matched**.

- **(a) Grade 43 cement – Used in plastering and flooring → Correct**

Grade 43 OPC is widely used for plastering, flooring, masonry, and general construction works (including moderate-strength RCC).

- **(b) Grade 33 cement – Used in RCC work of multi-storey building → Incorrect**

Grade 33 OPC has the lowest compressive strength (33 N/mm² at 28 days). It is suitable only for non-structural or low-strength works such as plastering, masonry, flooring, and plain cement concrete (PCC). It is **not** recommended for RCC work in multi-storey buildings, where higher strength grades (43 or 53) are required.

- **(c) Grade 53 cement – compressive strength is 53 N/mm² (28 days) → Correct**

By definition, Grade 53 OPC achieves a minimum compressive strength of 53 N/mm² after 28 days of curing.

- **(d) Portland puzzolana cement (PPC) – used in mass concrete and marine structure → Correct**
- PPC has lower heat of hydration and better resistance to chemical attack, making it suitable for mass concrete (e.g., dams) and marine structures.

Thus, option (b) is the incorrectly matched pair.

104. Answer A

Solution:

Jamb of Door Frame :

The door jamb is the **vertical wall face of a door opening** that supports the door frame. In the door frame, the jamb is the **vertical portion of the door frame** in which a door is secured. If you want to open and lock your door properly, door jamb is important.

105. Answer A

Solution

In PERT analysis, activity duration is assumed to follow a **beta distribution**.

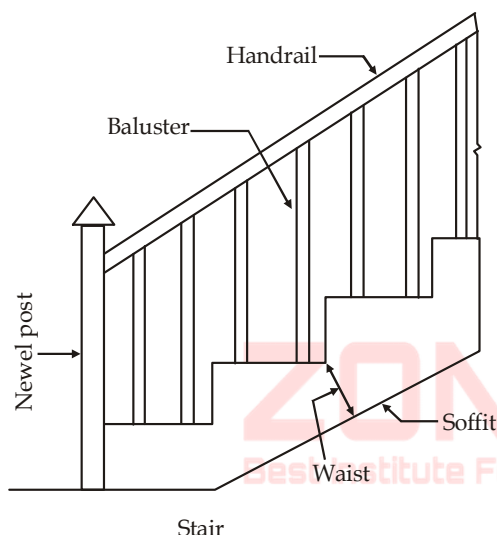
The **expected time** (t_e) is the mean of this distribution. By definition, the vertical ordinate drawn through the mean (expected time) divides the total area under the β -distribution curve into two equal halves (each of area 0.5).

- Optimistic time (t_o) and pessimistic time (t_p) are the extreme ends of the distribution.
- Most likely time (t_m) is the mode (peak) of the distribution, not the point that bisects the area.

Hence, the correct answer is **expected time**.

106. Answer A

Solution:



107. Answer A

Solution:

- **Soling:** Soling in the construction field is the bottom most layer of any component of structure.
- Soling may consist of bricks, stone cutting or such other building material having good crushing strength.
- It is done before laying the foundation, to provide better strength to the foundation.

108. Answer B

Solution:

In PERT analysis:

- Individual **activity times** are assumed to follow a **beta distribution**.

- The overall **project completion time** (sum of activity times along the critical path) is assumed to follow a **normal distribution** (by the Central Limit Theorem).

Since the question asks for the probability distribution of the **completion time**, the correct answer is the **normal distribution**.

109. Answer D

Solution:

- As fineness increases, specific surface area increases i.e. there is more surface area for reaction with water leads to increase the rate of strength development.
- As fineness increases void ratio or volume of voids also increases that leads to more shrinkage.

110. Answer B

Solution:

Sub classification of sedimentary rocks

1. Mechanical (Clastic Rock)
2. Chemical (Non-clastic rock)
3. Organic

111. Answer B

Solution:

$$t_e = \frac{t_o + 4t_m + t_p}{6} = \frac{5 + 4 \times 8 + 17}{6} = 9 \text{ days}$$

112. Answer A

Solution

Plenum System :

A system of mechanical ventilation in which fresh air is forced into the spaces to be ventilated from a chamber (plenum chamber) at a pressure slightly higher than atmospheric pressure, so as to expel foul air.

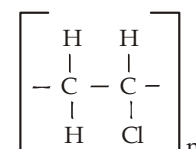
113. Answer B

Solution:

PVC poly vinyl chloride

it is a synthetic plastic polymer which is produced by polymerization of vinyl chloride its chemical formula is $[-CH_2-CHCl-]_n$

PVC is a thermoplastic material.



114. Answer A

Solution:

- **Artificially introduced** activities are dummy activities, shown by a **dotted/dashed arrow**.
- **Critical** activities are highlighted by a **thick arrow**.
- **Non-critical** activities are shown by a normal **single arrow**.
- A **dangler** is an activity that starts from an event but does not terminate at any event (or vice versa).

Thus the correct matching is **A-4, B-1, C-2, D-3**, which is option (a).

115. Answer C

Solution

Methods for Preservation:-

Following are the six methods adopted for preservation of timber:

1. Brushing,
2. Spraying
3. Dipping and steeping,
4. Hot and cold open tank treatment,
5. Injecting under pressure,
6. Charring,

- Dipping and steeping:

In this process wood is submerged in a tank of water and preservative mixture and allowed to soak it for longer period of time.

116. Answer B

Solution:

Given conditions:

- Activity **C** follows only activity **A** (C depends only on A).
- Activity **D** follows both activities **A** and **B** (D depends on A and B).

Option (b) correctly represents this:

- A leads to a node from which C starts.
- A dashed (dummy) arrow connects from the end of A to the node where B ends.
- D starts from the node that is reached by both B and the dummy from A.

This ensures:

- C depends only on A.
- D depends on both A and B.

The dummy activity has zero duration and is used only to show the logical dependency.

117. Answer C

Solution:

A **bar chart** (Gantt chart) has the following characteristics compared to a network diagram:

- **Statement 1 is correct:** Bar charts are simple to draw and easy to understand.
- **Statement 2 is correct:** Bar charts cannot show the interdependencies (logical relationships) between activities.
- **Statement 3 is incorrect:** Bar charts do **not** clearly distinguish between critical and non-critical activities. This is a key advantage of network techniques (CPM/PERT).
- **Statement 4 is correct:** Crashing of activities to find the optimum/minimum project duration is not possible (or not practical) with bar charts; network methods are used for this purpose.

Therefore, the correct statements are **1, 2 and 4**, which corresponds to option (c).

118. Answer C

Solution:

The normal curing period for lime mortar, is 7 days

119. Answer D

Solution:

The logical sequence of the given project management phases is:

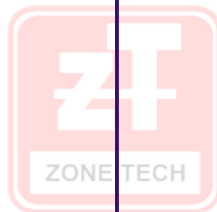
1. **Planning** – Define the project objectives, scope, tasks, and overall approach.
2. **Scheduling** – Assign timeframes, sequences, and resources to the planned tasks (this builds directly on the plan).
3. **Controlling** – Monitor progress against the schedule, measure performance, and take corrective actions.

Thus the correct order is **Planning → Scheduling → Controlling**, which corresponds to option (d) **3 – 2 – 1**.

120. Answer D

Solution:

- **Lime:** When present in excess, free lime (CaO) undergoes slow hydration after the cement has set, leading to substantial volume expansion and subsequent cracking.
- **Magnesia:** Excess magnesia (MgO) behaves similarly to free lime. It hydrates very slowly, causing delayed expansion and structural disruption long after the concrete has hardened.
- **Sulphur:** A high concentration of sulfur trioxide (SO_3) or calcium sulfate reduces the soundness of cement. The excess sulfates react internally to cause late-stage expansion.



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